RSA

On tap at RSA
Proliferating malware, security in the cloud and government oversight are just a few topics to be addressed at this week's RSA Conference. **Page 12.**

Clear Choice Test: 3Com switch
New core switch offers a fast, green alternative to Cisco. **Page 26.**

NETWORKWORLD

Maximize your return on IT ■ www.networkworld.com   April 20, 2009 ■ Volume 26, Number 15

Carriers to agencies: Show us the money

BY CAROLYN DUFFY MARSAN

Two years ago, the U.S. General Services Administration awarded a 10-year, $20 billion program called Networx that was touted as the world's largest-ever telecom deal.

But with federal agencies spending only a fraction of the projected dollars on Networx so far, carriers are asking: Where is the money?

GSA designed Networx as a soup-to-nuts telecom deal, providing domestic and international voice, data, video and wireless services to all federal agencies. GSA awarded Networx contracts in spring 2007 to AT&T, Verizon Business, Qwest Communications, Sprint Nextel and Level 3 Communications.

When Networx was awarded,
See Networx, page 18

Exchange 2010 beta shows great promise

Administrators and users gain new capabilities

BY JOEL SNYDER, NETWORK WORLD LAB ALLIANCE

Microsoft gave us a 10-day head start to test the first public beta of Exchange 10 before it officially hit the streets last week, and we came away impressed. Microsoft has packed improvements into every corner of this new product.

NETWORKWORLD CLEAR CHOICE

We didn't get to fully test each and every new feature — the list is eight pages long. But we can say that there's plenty for both e-mail administrators and users to like in this upgrade. For users, especially those making heavy use of Webmail and distribution lists, Exchange 2010 provides a better user interface and expanded capabilities, including self-service management of many Exchange features.

If you are thinking of upgrading to Ex-

change 2007 but haven't done so, the new user features in Exchange 2010 may make the six-month wait for the shipping product worthwhile.

The self-service features are another reason to consider delaying an upgrade. On the other hand, if you don't see VoIP features, Webmail or mobile device access as huge user driven factors in your e-mail deployment, Exchange 2010 won't be that much of a change from Exchange 2007.

For administrators, we found powerful new features in the areas of high availability and scalability that build on Exchange 2007, yet simplify the task of implementing large Exchange networks. In Exchange 2010, Microsoft is extending the administration and management
See Exchange, page 16
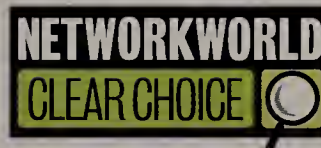
BRIDGE TO TERABIT ETHERNET

40/100Gigabit Ethernet products to ship by year-end; terabit speeds anticipated by 2015. **Page 24**

Bob Metcalfe came up with the idea for Ethernet in 1973.

◆IEEE

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COOLTOOLS

■ The USB Net ShareStation lets you connect your home router or switch to as many as four USB-enabled devices. See Cool Tools, page 22.

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BRIDGE TO TERABIT ETHERNET

40/100Gigabit Ethernet products to ship by year-end; terabit speeds anticipated by 2015. **Page 24**

Bob Metcalfe came up with the idea for Ethernet in 1973.

◆IEEE

GOODBADUGLY

Network start-ups rolling in venture funding

Well, OK, that's probably getting carried away. But four network start-ups — ExtraHop Networks (performance management), Reflex Systems (virtual systems management and security), Reva Systems (RFID management) and StoredIQ (eDiscovery and information management) — grabbed a combined $25 million in venture funding last week.
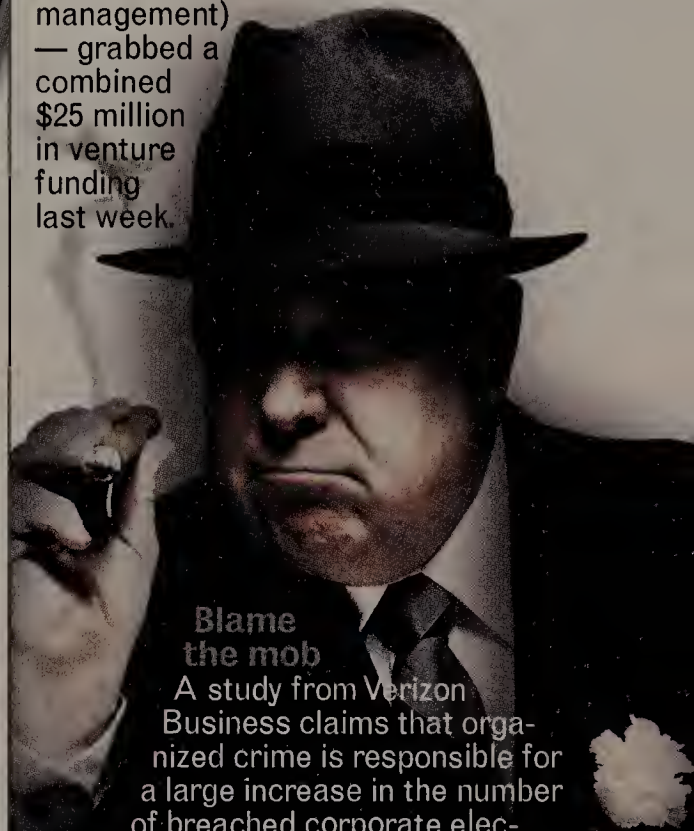
Blame the mob

A study from Verizon Business claims that organized crime is responsible for a large increase in the number of breached corporate electronic records, which totaled roughly 285 million last year. According to the study, which Verizon Business compiled using data from the 90 confirmed corporate network breaches it recorded last year, 93% of all records breached came from the financial sector. The company also says that nine out every 10 of these breaches involved "groups identified by law enforcement as engaged in organized crime."

Ex-Qwest CEO behind bars

The outspoken former head of Qwest, who executed a bold merger between the broadband service provider and a local telephone company, last week reported to prison at the Schuylkill Satellite Camp in Minersville, Pa. Joseph Nacchio's last-ditch attempt to avoid jail failed when U.S. Supreme Court Justice Stephen Breyer denied his application for bail and a temporary stay. That means he'll await his appeal from prison. It's barely a year since a jury found Nacchio guilty of 19 counts of insider trading and sentenced him to six years in prison. They found that while he was publicly forecasting strong growth for Qwest as CEO in 2001, he was selling off his own stock in the company because he knew it was struggling.

Buy America ... or bye America?

Re: Cisco against Buy America provisions of the $7.2B broadband stimulus fund (www.nwdocfinder.com/9635):

In the case of electronics and electronic components, there are many that are no longer made in America. Offshore companies already have exclusive manufacturing of several basic components and several assemblies. I don't think we could build telecom products exclusively from Made In America parts if we wanted to. And to try to come back up to speed and quality would be very expensive. It would be nice if we could, but that ship has left.

Anon

It doesn't take a genius to figure out that large corporations like Cisco are no longer "American" institutions, regardless of where their headquarters are. The first 30 years of unrestrained greed and avarice has produced a class of senior management that is treasonous in their pursuit of profit at any cost. They hold no allegiance to any nation, including ours.

Jaded Republican

No stopping Microsoft netbooks

Re: Microsoft eating up U.S. and global netbook markets (www.nwdocfinder.com/9636):

Although Microsoft will need to adjust to the lower per-machine revenues it derives from netbook sales, one fact is clear: If these machines continue growing as they have been, the company will be able to make it up in volume. According to NPD, Windows now accounts for over 96% of all netbooks sold in the United States, meaning that it's pretty much kicked Linux right out of the market. And worldwide, Windows already owned 76% of the netbook market by the end of 2008, and that figure is rising month by month. According to IDC, Linux preinstallations on netbooks will account for just single-digit market share by the end of this year. Game over? Yeah, I think so.

Anon

Trusting the source is an age-old issue

Re: The wild, wild Web: Whom can you trust? (www.nwdocfinder.com/9637):

The Web hasn't changed anything except given more choices. It's same as with papers, books, rumors, stories, tales, political speeches, religious messages, whatever — each has its own agenda and it is up to us (our own brains) to filter what we want and can believe or what is pure trash fed to us. Anyone believe marketing and advertising any more? Your history books — their history books? Their view of the world or yours?

tuomoks

Internet evolving, not dying

Re: Is the Internet doomed to fail? (www.nwdocfinder.com/9638):

I agree that "the current state" of the Internet will be different tomorrow and if we declare every variation of what the Internet looked like in the past as being dead then I would urge that the Internet already died and will do so every day into the future as a new one emerges.

The language, or protocols, of the Internet will continually change and the infrastructure that drives it will change along with its owners and the cost and economics for access with change along with it. The Internet has gone from a generic name for the interconnection of a bunch of defense and research networks into really the concept of an interconnected global economy.

The success of the Internet has been due to its ubiquity and its ability to change with the times. It is only fitting that in the year of Darwin's 200th anniversary that we have the ability to watch the evolution of an organism (the Internet) that isn't even biological before our eyes. This is the Internet's strength, not weakness.

Viper

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002. Please include phone number and address for verification

BLOGOSPHERE

■ **Cisco may experience near-term delays with MDS storage switch refresh.** Cisco Subnet blogger Brad Reese cites a research note that says Cisco might see some delays, which could provide Brocade with an incremental share gain. The report says: "Near-term demand remains solid for Brocade with positive trends with key OEM partners despite the uncertain macro as storage continues to rank high in terms of IT spend. Our recent dialogue with storage vendors indicates Brocade's strong Fibre Channel OEM ties and, if anything, Cisco's aggressive push into the data center may be the catalyst for IBM and HPQ to strengthen their respective Ethernet connections with Brocade as well. So while Brocade may lose some share with EMC much longer term as Cisco gains traction with its Unified Computing Platform, we think the company may more than make it up on the Ethernet switch side." **www.nwdocfinder.com/9632**

■ **Hard times in PC land.** Craig Mathias in his NearPoints blog examined Intel's earning report disclosed last week. Intel's Paul Otellini says in Intel's release: "We believe PC sales bottomed out during the first quarter and that the industry is returning to normal seasonal patterns". Given the economy and Vista together, it's easy to see how seasonal patterns might return, but only at a far lower level of sales. Intel's margins are deteriorating, and they really can't handle a lower sales volume for long without um, taking some action. Intel is not really to blame for this state of affairs — Microsoft is. Vista is an abject failure. Let's face it, no one really cares if their processor is made by Intel, AMD, or Matsumura Fishworks and Tamaribuchi Heavy Manufacturing Concern. What customers really buy are applications. **www.nwdocfinder.com/9633**

■ **Why is Google's Schmidt still on Apple's board?** The Google Subnet reviews that question asked by CNBC analyst Jim Goldman in a report on Google's upcoming earnings call. Isn't there something about conflict of interest and not having the CEO of a strong, direct competitor on your board? We've already seen the soft underbelly of the Schmidt-Apple relationship come to light, when Google caved to Apple and voluntary dropped the iPhone's signature multitouch capability from the G1. And Goldman points out that the Google-Apple relationship is only set to get more tangled, now that several vendors are considering using Google's Android as their netbook OS of choice. **www.nwdocfinder.com/9634**

VIDEO INSIDER:
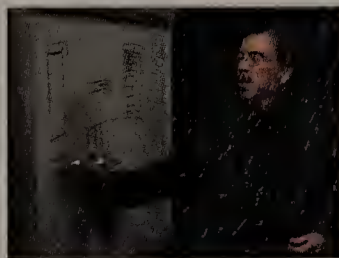
Exploring server virtualization

In Part 2 of our series on server virtualization, Tom Henderson digs deeper into the concepts and strategies around this technology.
www.nwdocfinder.com/9624

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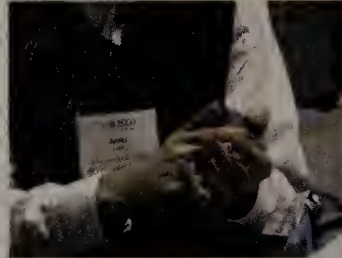
Control a PC via clapping

New software that uses onset detection and pattern recognition can tell the difference between different clapping sounds.
www.nwdocfinder.com/9625

PANORAMA PODCAST:
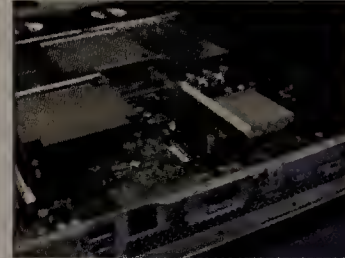
Sun discusses Nehalem servers, IBM rumors

Sun launched new servers last week based on Intel's Nehalem microarchitecture.
www.nwdocfinder.com/9626

BEST OF NWW'S NEWSLETTERS

Managing IP addresses with free tools

Network management: Few people would argue the importance of IP addresses to network operations, but many don't make managing them a priority in their environment, especially in tough economic times. Recent research from BT showed that more network managers are moving away from spreadsheets and investing in automation and other tools to manage IP addresses. Still many couldn't get an IP address management project pushed through the budget process for various reasons. Some reasons pointed to other projects taking a higher priority and others simply thought their network was too small to justify the investment. But many working in network operations today believe managing IP addresses is too critical a project to fall victim to budget crunches.
www.nwdocfinder.com/9627

Tech exec: For a number of years, I've worked with various technology companies and organizations to help them develop and promote their certification programs. I thought I'd share some of my insider knowledge about how to get the most out of your IT certifications. Let's call this "Linda's List of Best Practices to Benefitting from IT

Certifications." I'll start by defining what I mean by "certification." In the IT industry, there are numerous organizations (e.g., CompTIA, SANS Institute, SNIA) and vendors (e.g., Cisco, Microsoft, HP, Red Hat) that have formal programs that validate the knowledge and skills of an IT professional. The person who goes through this validation process — usually one or more written or hands-on tests — attains a "certification" or "credential." Some credentials are easy to earn; others take many months or even years of training, hands-on experience, book study and other preparation. Regardless of the type of certification you choose to earn, there are a few simple things you can do to maximize the value you get out of your certification. If you don't already possess a credential, take the steps to attain one. When you are competing for a new job, contract work, or even a position within your company, the certification can be the differentiator between you and another candidate. Hiring managers often state that a certain certification is required or at least preferred for an open position. This is especially true if you want to be hired by a value-added reseller or consultancy.
www.nwdocfinder.com/9627

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Sprint

Researcher offers tool to hide malware in .Net

A computer security researcher has released an upgraded tool that can simplify the placement of difficult-to-detect malicious software in Microsoft's .Net framework on Windows computers. The tool, called .Net-Sploit 1.0, allows a hacker to modify the .Net framework on targeted machines, inserting rootkit-style malicious software in a place untouched by security software and where few security people would think to look, said Erez Metula, the software security engineer for 2BSecure who wrote the tool. In addition, .Net-Sploit automates some of the arduous coding tasks necessary to corrupt the framework, speeding up development of an attack. "You'll be amazed at how easy it is to devise an attack," Metula said during a presentation last week at the Black Hat security conference in Amsterdam. www.nwdocfinder.com/9640

Cisco reveals aggressive pricing for blade server system.
Cisco last week divulged more details on its Unified Computing System for data centers, including pricing and performance benchmarks. UCS combines networking, blade servers and virtualization into an integrated system optimized

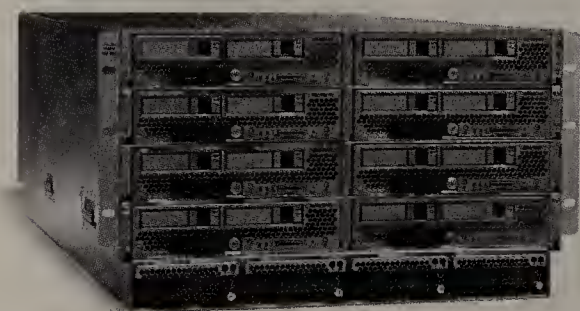for a unified data center switching fabric of LANs and storage-area networks. Cisco says each UCS component — blade, CPU, disk, memory and I/O cards — is priced competitively with other leading server vendors' elements, yet UCS costs less in a configured system because of its ability to converge host bus adapter and 10Gbps Ethernet network interface card capabilities. In a configuration of about 320 blades, UCS costs just more than $500,000 — compared with $1.6 million for a leading vendor's 320-blade configuration — because of a 10x reduction in the number of Ethernet and Fibre Channel switches, management modules and associated software licenses, Cisco says. www.nwdocfinder.com/9641

Recession resistant: 10 technologies CIOs are still buying.
Even in the midst of a recession, IT leaders realize they can't neglect certain technologies. Seventy-percent of 1,400 CIOs polled by Robert Half Technology said their companies will invest in IT initiatives in the next 12 months. Among those, 43% indicated that information security projects would be a top priority; 28% plan investments in virtualization, and 27% will be looking to make their data centers more efficient with technol-

ogy buys. Other investment areas include: VoIP (cited by 26% of respondents), software-as-a-service (26%), green IT (20%), business intelligence (19%), social networking (18%), Web 2.0 (17%) and outsourcing (16%). www.nwdocfinder.com/9642

Sun fires back at Cisco with blade network switch.
Sun last week introduced a networking product that takes aim at an emerging rival in the server market, Cisco. The long-term goal of both vendors is to simplify data centers by combining storage, networking and computing capabilities into a single platform. Sun's new offering is the Virtual Network Express Module, a piece of hardware that slides into a blade chassis and does the job of an aggregation switch, managing traffic between the blades and a central 10-Gigabit Ethernet switch. Sun's technology is "very impressive," says Nathan Brookwood, principal analyst with Insight64. It may provide less fine-grained management capabilities than a third-party switch, such as the ability to prioritize traffic from different applications, but many customers don't need that, Brookwood says. Sun also launched six servers and a workstation based on Intel's new Nehalem microarchitecture, including Sun's first two servers to incorporate its new flash storage module. www.nwdocfinder.com/9643

Google suffers several negative firsts in quarter.
It took a worldwide recession to put the Google growth machine in reverse. The world's largest Internet search company marked several negative firsts in the quarter just passed, despite beating Wall Street's expectations in a tough economic environment. Google saw its revenue ($5.51 billion) fall 3% compared with the previous quarter, marking its first quarterly revenue decline since it began publishing results in 2003. Total advertising revenue, a key metric followed by analysts, fell 3% compared with the fourth quarter, its first drop on record. The company's

permanent head count also fell for the first time since it began reporting, to 20,164 compared with 20,222 in the fourth quarter. www.nwdocfinder.com/9644

Time Warner Cable nixes bandwidth caps.
In the wake of a customer backlash, Time Warner Cable said it will shut down bandwidth cap trials for its Internet services. CEO Glenn Britt said there was a "great deal of misunderstanding" about Time Warner Cable's plans and that the company would shelve the tests "until further consultation with our customers." Britt emphasized, however, that the company still believes that "consumption-based billing may be the best pricing plan" going forward and he did not rule out restarting the tests. www.nwdocfinder.com/9645

Microsoft's cloud identity platform on track.
Microsoft's identity platform for the cloud is on track, and users will likely see another beta next month and final shipment before year-end, officials said last week. Code-named Geneva, the open identity platform extends to the cloud and provides development tools, gateway technologies and long-awaited Microsoft support for the SAML 2.0 protocol. Geneva's foundation is the claims-based access model and Security Token Service technology that Microsoft has been developing over the past few years as part of its industry effort to create a single identity system based on standard protocols. The platform consists of the Geneva Server, formerly called Active Directory Federation Services 2.0; Geneva CardSpace Client, a smaller and faster version of the identity client now available with Vista; and the Geneva Framework, which was formerly code-named Zermatt. www.nwdocfinder.com/9646

Mobile devices tax unprepared IT groups.
Companies expect to support a growing range of smartphones and mobile employees, but their mobile infrastructure lacks key elements to do so efficiently and cost-effectively, new data shows. Osterman Research's survey of 125 IT decision-makers found that 82% of respondents supported BlackBerry devices in 2008, and 66% supported Windows Mobile. While only 20% of respondents supported iPhones in 2008, 44% plan to support them in 2009. At the same time, many companies are not well equipped to minimize mobility disruptions. Asked how confident they were that all elements of their mobile messaging platform are fully protected against downtime, 39% said they were "very confident" or "confident." Another 39% said they were somewhat confident, and 17% were "not too confident." Five percent admitted they were "not at all confident." www.nwdocfinder.com/9647

H-1B demand falling sharply

BY DENISE DUBIE

Fewer companies filed petitions for H-1B visas this year as the economic recession continues to threaten U.S. jobs and shrink the demand for foreign talent.

U.S. companies since April 1 have filed some 42,000 petitions with the U.S. Citizenship and Immigration Services agency for 65,000 H-1B Specialty Occupation Visas available for 2010, a fraction of previous years' petitions. In 2007, the USCIS received some 150,000 petitions in a matter of days, and in 2008 the agency conducted a lottery after 163,000 petitions were filed in less than a week.

Because this year's cap hasn't been reached, the USCIS will continue to accept applications for the 65,000 general H-1B visas (as well as for the 20,000 visas made available to recipients of a graduate degree from a U.S. university; roughly 20,000 petitions for these advanced degree visas have been received so far in April, but the agency expects not all will be approved).

Industry watchers say the paltry number of petitions filed shows that despite U.S. lawmakers working to restrict the number of H-1B visas permitted, the market will dictate what the country needs in terms of hiring foreign talent.

"There is no need to do a lottery this year, and these numbers show that the market for H-1B is self-regulating. The cap mandated by Congress is artificial," says Eleanor Pelta, a partner at law firm Morgan, Lewis & Bockius in Washington, D.C., and an official with the American Immigration Lawyers Association.

Nonetheless, restrictions in the economic stimulus package have proposed to limit those companies receiving government funds from

H-1B demand drops

Immigration officials were forced to limit and conduct a lottery of new H-1B petitions in previous years after receiving applications for well over the number of available visas within the first week of filing.

New H-1B petitions filed

*REPORTED TO DATE • SOURCE: UNITED STATES CITIZENSHIP AND IMMIGRATION SERVICES
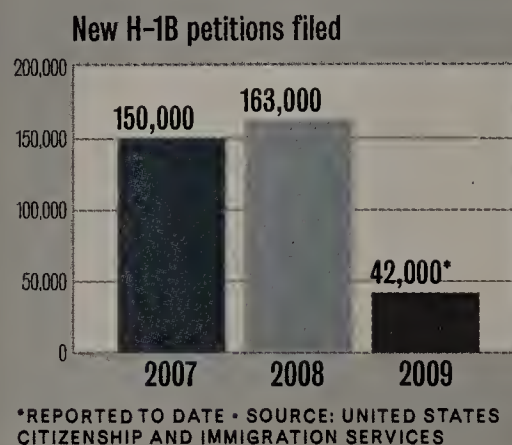
hiring foreign nationals without first exhausting all other U.S. options. For instance, one provision would restrict H-1B hiring at companies that have received funds from the Trouble Assets Relief Program (TARP) and that have more than 15% of their workers on visas; these companies would be required to prove they have diligently recruited American workers for the position and that in hiring a foreign national they are not replacing a U.S. citizen.

But for the most part, the companies that might be eligible for money from the govern-

ment under such programs aren't hugely dependent on H-1B visas for filling positions. According to the National Foundation for American Policy (NFAP), less than 1% of the staff at some of the largest U.S. financial firms hold H-1B visas. For instance, Goldman Sachs and JPMorganChase filed for 227 and 236 new H-1B visas in 2007, which represented 0.74% and 0.14% of their total employees, respectively.

"The updated government restrictions have very little to do with the drop off in petitions," Pelta says. "But the senators and congressmen that really have problems with the H-1B program will not look at this year's petitions as an indicator that the program should be allowed to meet the needs of U.S. companies in good and bad economic times. There are restrictions in place and government agencies are equipped to enforce them without requiring an unrealistic cap."

Pelta says demand for H-1B visas follows the job market, and as more companies seek to hire foreign nationals, often that means an increase in jobs for U.S. citizens as well. A March 2008 NFAP brief reports that rather than displacing American workers, data showed for every one H-1B position requested, U.S. technology companies increased their employment by five workers.

"If the U.S. wants to participate in the global economy, it must shed some of its protectionist and outdated policies, and lawmakers must realize we need to view resources globally as well," Pelta says. "Short-sightedness on immigration programs could hurt our universities and businesses five years down the road." ■

ING examines cloud computing

BY JON BRODKIN

Cloud computing is on the minds of many IT pros today, and Alan Boehme of ING Financial Services is no exception.

ING is just the type of large user organization that cloud vendors want signing up for their various online business services. But while Boehme, senior vice president and head of IT strategy and enterprise architecture at ING, is excited about the potential of cloud computing, he says the industry needs to get a few things in order before this outsourced model fulfills its potential.

Boehme's biggest concern is that software licensing policies haven't caught up to the cloud. The cloud lets customers buy computing power on an as-needed basis, but software licenses for products that could be used in the cloud typically must be purchased up front, he says. Software licenses should also be avail-

able on an as-needed basis, he says.

"I haven't seen any vendor with flexibility in software licensing to match the flexibility of cloud providers," says Boehme, who is based in Windsor, Conn. "This is a tough one because it's a business model change. ... It could take quite some time."

ING, which boasts an IT infrastructure featuring 2,900 to 3,000 servers and 900-plus network devices, has used software-as-a-service for several years for needs such as sales automation, CRM, human resources and succession planning. Now ING is evaluating hosted application building platforms as well as online storage and compute services.

"We are literally testing everybody. We have things running across multiple providers," Boehme says.

Boehme says ING's policy is not to discuss specific vendors, but the players in this space

include Amazon, GoGrid, Google and Salesforce. ING is not yet ready to move from test to production. "We have not put any of those services in production but we are testing the viability of all these types of services," Boehme says. "I know of very few large organizations that are doing these things in production. I know of a lot of small and medium-sized businesses that are."

Boehme has found that cloud services make it easy to scale resources up and down. But to build a business case for the cloud, companies need to look at the services' technical viability, security, manageability, and the ability to move applications from one cloud to another.
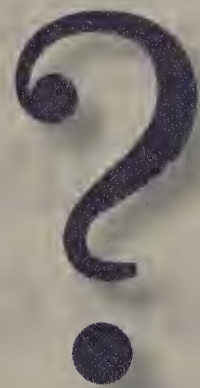
Boehme is a founding member of the Cloud Security Alliance, a group formed last month to promote best practices in cloud security. The alliance will release a white paper at the

RSA kicks off on somber note

**BY ELLEN MESSMER
AND TIM GREENE**

SAN FRANCISCO — Against an omnipresent backdrop of recession and uncertainty, IT security pros this week will gather at an RSA Conference focused on malware proliferation, protection of virtualized and cloud computing environments, and the specter of rising government involvement in their work.

Though attendance in recent years has hit 17,000, conference organizers say this year's 18th annual gathering will likely draw fewer to see and hear from some 325 vendors spread across the exhibit floor of San Francisco's Moscone Center.

One telling sign of the times: RSA Conference is extending free passes worth more than $2,000 to 25 individuals described as "victims of corporate downsizing ... who lost their jobs due to the economic environment."

There will be no shortage of industry star power on hand.

Enrique Salem, who this month became president and CEO of Symantec, will take the stage in a keynote address expected to delve into the exploding growth of malware and what approaches can be taken to confront it. His company last week released its annual threat report summary, which points out unique malware specimens more than doubled in 2008.

RSA President Art Coviello will try and rally the industry to tackle the security issues surrounding online collaboration, and mobile and cloud computing.

RSA will be announcing what it calls "Project Share," which will include offering the RSA BSAFE encryption toolkits — specifically those used for C++ and Java applications — for free. Such toolkits would otherwise cost at least tens of thousands of dollars. RSA is also expected to make significant announcements concerning VMware (which EMC also owns) and security.

Cisco's John Chambers is scheduled to talk about online collaboration and security, while McAfee CEO Dave DeWalt will discuss the impact of cybercrime.

Besides industry executives, the U.S. government will be represented in keynote presentations by Melissa Hathaway, the Obama administration's acting director for cyberspace and Lt. Gen. Keith Alexander, director of the National Security Agency (NSA) and chief of central security services. Hathaway is expected to present the findings of the administration's promised 60-day "Cyber Security Review," which could set a new pace for regulation and defense of networks pertaining to critical infrastructure.

NSA's Alexander will speak to the prospects for "public-private partnership" for cybersecurity. But the counterpoint is likely to come from noted writer James Bamford, author of the *Shadow Factory* and other books about the super-secretive NSA, in his keynote address.

Indeed, the RSA Conference is going to be a forum for the controversial theme of how far the government can or should go to take control of networks and conduct surveillance, and whether there is already something of a Cyber Cold War occurring.

Contentious issues in virtualization security will be debated by panelists that will include one of the founding fathers of software virtualization, Citrix CTO Simon Crosby, who helped invent open source Xen.

The security of cloud computing is a major topic at the conference, with 15 sessions dedicated to all aspects from cloud-based security services to identity management.

How the Skype spinoff could change the market

BY BRAD REED

Now that eBay has set a tentative timetable to spin off Skype, the question becomes whether the Internet phone company can become a legitimate force as a voice service provider.

Some analysts say Skype has been somewhat stifled while being a part of eBay because its business model hasn't gelled well with eBay's online auction business. EBay CEO John Donahoe acknowledged as much last week when he said Skype was "a great stand-alone business" but it had "limited synergies" with eBay.

Despite these limitations, Skype has still been remarkably successful over the past few years, as the company's number of registered users worldwide has grown by nearly eight-fold since being purchased by eBay in 2008. Additionally, its revenues are projected to nearly double over the next two years, reaching an estimated $1 billion in 2011.

Gartner analyst Elroy Jopling says once Skype is officially spun off next year, it will be free to concentrate exclusively on its voice business and to expand its services more toward the mobile area. The company has started moving in this direction this year and unveiled applications for iPhones and BlackBerry devices that are aimed at giving smartphone users alternatives to making voice calls over traditional cellular networks. Moving forward, Jopling says that how well Skype penetrates the mobile market will be the "biggest factor" in its potential success.

Irwin Lazar, an analyst at Nemertes Research, also thinks Skype's success in the mobile voice market will determine its future and says its addition to the smartphone market is the first step in making the company a household name. More significantly, he thinks if Skype catches on with more popular consumer devices it could eventually put pressure on cellular carriers to change how they do business.

Although Skype iPhone applications only run over Wi-Fi, Lazar says Skype will likely start running more over carriers' data networks once they start building more 4G networks based on technologies such as Long Term Evolution and WiMAX.

"Skype's iPhone client was really the first shot across the bow of cellular carriers," he says. "As they build out higher speed data networks it becomes easier to do voice over data services."

This could spell trouble for carriers, Lazar

A brief history of Skype

How Skype went from humble start-up to mobile VoIP phenomenon.

2003: Skype officially founded as an inexpensive alternative for users who want to make calls over IP.

September 2005: EBay purchases Skype for $2.5 billion; at the time Skype had 54 million registered users.

December 2005: Releases its first video telephony software.

April 2006: Passes 100 million registered users.

June 2007: Releases Version 3.5 for Windows; three months later, the program is hit with a worm that spreads through its chat feature.

March 2009: Announces that it is testing Skype for SIP, a service that lets Skype users hook onto corporate IP PBXs; Skype also issues its first official iPhone application.

April 2009: EBay announces that it plans to spin off Skype by mid-2010; Skype boasts over 400 million users.

U.S. retailers lose $40 billion annually
due to inefficient supply chain processes.
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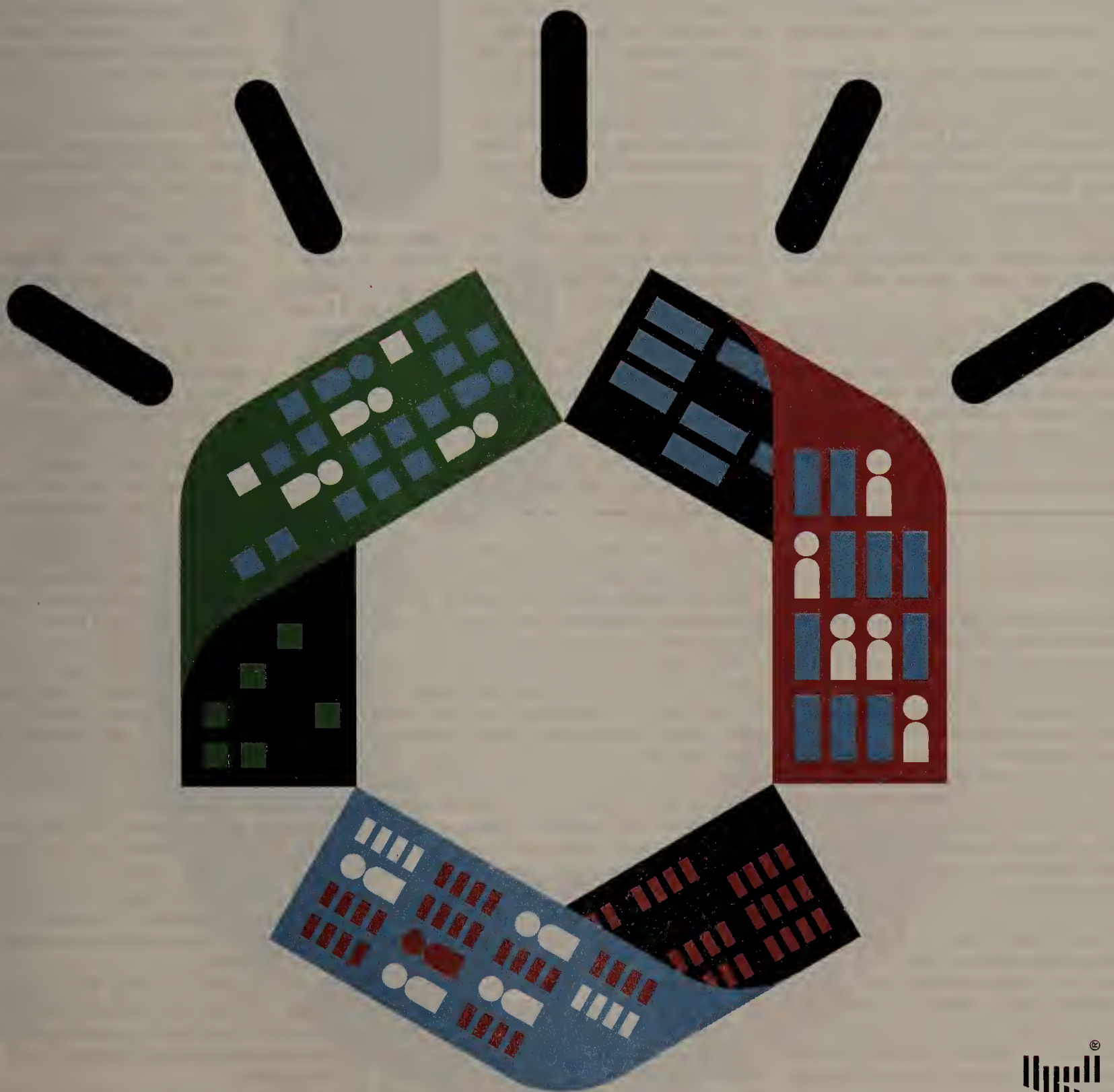
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EMC, VMware scale up data center

BY JON BRODKIN

EMC and VMware are promising mass scalability in the virtual data center with new products that will let enterprises deploy and manage hundreds of thousands of virtual servers.

While EMC last week unveiled a new Symmetrix storage array designed to support heavily virtualized data centers, VMware this week will announce vSphere, the next generation of its core hypervisor and related management tools.

EMC's new Symmetrix V-Max storage system (short for Virtual Matrix) is being positioned as a second flagship product alongside its DMX-4. EMC claims its new Virtual Matrix architecture will deliver massive scalability, delivering tens of millions of IOPS and the ability to manage hundreds of petabytes of storage for hundreds of thousands of virtual machines from a single management system. The system combines flash-based solid-state drives with Fibre Channel and SATA.

V-Max uses Intel Xeon quad-core processors to speed up data access, along with software that automates provisioning of storage to physical and virtual machines. The Virtual Matrix provides massive scalability by connecting and sharing resources, such as I/O ports, CPUs, mirrored global memory, interconnects and a storage operating system, according to EMC.

While server virtualization makes one server act as many independent virtual machines, storage virtualization takes 1,000 disparate elements and makes them appear as one, says Steve Duplessie, founder and senior analyst at Enterprise Strategy Group. Server virtualization by itself isn't as useful as it should be, because when a virtual machine moves from one box to another it might lose access to its data, he says.

EMC's new system ensures that virtual machines maintain access to data even as they move, he says. Moreover, when an enterprise adds more terabytes, the system automatically rearranges itself and redistributes the load. The real key is reducing the amount of manual processes required of a storage administrator.

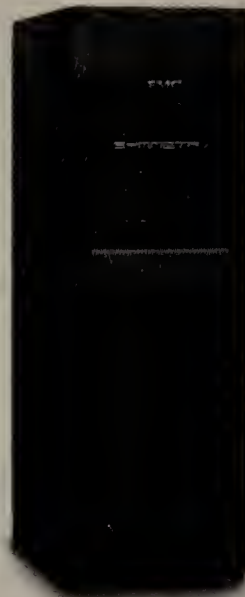The details of VMware's announcement are still under wraps, but vSphere — the follow-up to VMware Infrastructure 3 — is expected to deliver the capabilities of VMware's long-promised Virtual Datacenter Operating System (VDC-OS). Intended as an infrastructure operating

EMC's Symmetrix V-Max storage array is designed to support heavily virtualized data centers.

system, VDC-OS will aggregate virtualized servers, storage and network resources into one big computing pool that can be managed from within the same software console.

VMware has positioned the operating system as a crucial tool in the world of cloud computing because it will connect private data centers to those of external cloud providers, letting enterprises manage internal and external resources in tandem.

Server vendors can be expected to line up in support of VMware's new product. Unisys has already said it will roll out a new line of enterprise servers with vSphere embedded.

On the EMC front, Duplessie says there are two easily identifiable drawbacks to V-Max. The system is expensive and raises the specter of vendor lock-in, particularly because EMC owns VMware.

V-Max starts at $250,000, which covers one 42U rack system with about 200TB. Full-featured systems that scale up to many petabytes will cost millions of dollars.

The insertion of flash into EMC arrays is nothing new, but analysts have criticized the company because its systems force storage administrators to manually move data from tier to tier. EMC announced that it will address that shortcoming with FAST (Fully Automated Storage Tiering), a new software tool that "will automate the movement of data across multiple storage tiers based upon business policies, predictive models and real-time access patterns." This type of software, already offered by vendors such as Compellent, helps prevent storing rarely-accessed data on expensive flash drives.

FAST will be available in the fourth quarter of 2009 for both V-Max and DMX-4.

The V-Max will not replace the DMX-4, nor will it make EMC's new Atmos cloud storage software obsolete, the company says. Atmos is designed to manage petabytes of information across tens or hundreds of geographic locations, using x86 servers with high-capacity, low-cost SATA drives.

Symmetrix arrays, says Bob Wambach, senior director of Symmetrix marketing, are for mission-critical applications including ERP, transactional systems, e-mail, databases and electronic trading.

EMC has optimized V-Max for VMware's hypervisor and Microsoft's Hyper-V virtualization software, but not for Citrix's XenServer.

Although EMC stressed that V-Max will not replace the DMX-4, it said the new product triples the performance of the DMX-4 while offering twice the connectivity. ■

Skype

explains, because they will inevitably lose revenue if users simply subscribe to flat-rate data plans and then use Skype exclusively for their voice services. Lazar says carriers have a few options to preserve their revenue streams: they can block Skype outright on their data services, they can implement their own metered data plans that charge per bit consumed or they can offer their own flat-rate VoIP service that is priced competitively with Skype's service.

Blocking Skype all together is unlikely, says Infonetics Research analyst Diane Myers, because companies such as Google and Apple have been putting pressure on carriers to not wall off their networks and to let their users access any application they wish.

"IPhone and Google's Android platform are really breaking down barriers for traditional telecom companies," she says. "What they're interested in doing is the polar opposite of what telecom companies have been traditionally interested in."

And besides, Lazar notes, it would only take one smaller carrier such as T-Mobile offering to host Skype over its data network to foil the big incumbents' competitive advantage in keeping Skype off their own networks. This means that the telcos will at some point have to come up

with their own IP-based voice services.

"The carriers want to avoid becoming 'dumb pipes' that make money on monthly access charges but nothing else," Jopling says. "Without question the carriers will drag their feet."

While Skype could provide headaches for carriers in the consumer markets, it is less likely to have such an immediate impact on enterprise markets. For one thing, the fact that Skype does not own any of the pipes it rides over means that it can't section off a certain chunk of bandwidth to ensure call quality. And even though the company is developing an enterprise service that would allow business users to connect Skype with corporate IP PBXs, Jopling says it has a long way to go before it has both the security and QoS features that enterprises need for their voice systems.

"In an enterprise it's more important from a security perspective that when you open up your network to the likes of Skype you can also increase your risk," he says.

Myers expresses a similar view and says Skype has a long way to go in adding security features before it becomes a trusted enterprise product.

"In terms of the enterprise market, I don't think a lot of carriers are losing sleep over Skype," she says. "If I were an enterprise, then a lot would have to happen for me to use Skype for my [Session Initiation Protocol] trunking." ■

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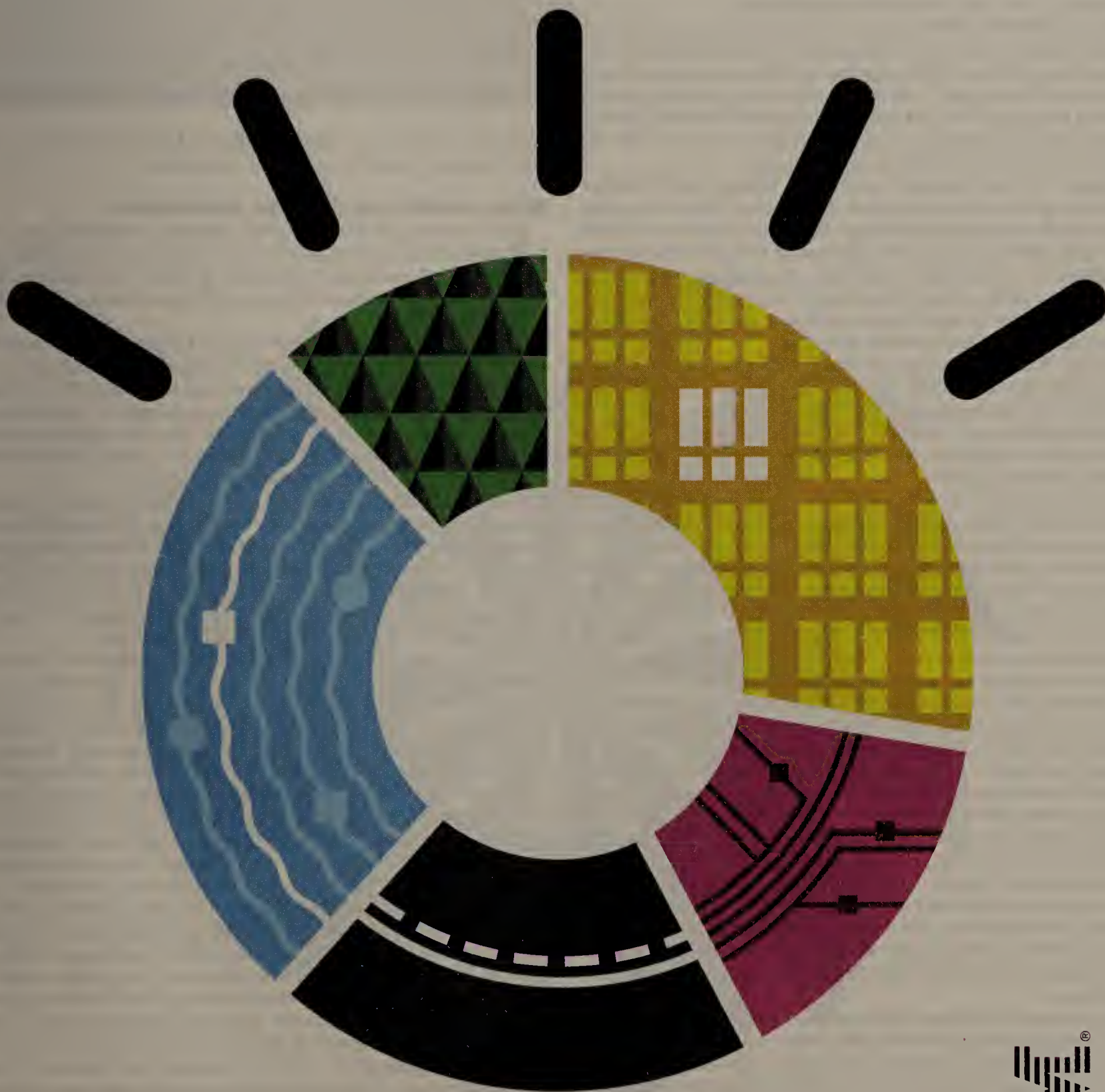
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Exchange

in very logical ways from the model laid out in Exchange 2007.

In addition to the cleaner scalability and availability features, Exchange 2010 has better command-line support (including remote Exchange Shell), integrated archiving, and role-based access controls.

Webmail features on par with Outlook

Users accustomed to Web-based access to their personal e-mail through free Internet services such as Google's Gmail, expect the same power and access through a browser for their business e-mail. Exchange 2010 stands up very well to these high expectations.

Exchange 2010's Web client is easier to use because of features such as threaded messaging (which sorts and groups messages by subject line) and single-screen in-box (which lets you see all your messages without having to click "next screen"). Microsoft added strong server-side search features in Exchange 2007, and these are extended to the Web client in Exchange 2010. This gives you access to your entire message store, even if you're on a device that has no local mail storage.

Exchange 2010 also includes a helpful new feature called "MailTips," which pops up information messages about e-mail you're composing. For example, if you're sending a message to someone who has set a vacation message, MailTips pops up this information while you're addressing the message. The version we tested had several examples, including warnings about sending binary attachments (such as .EXE files), which recipients might not be able to open, sending to large distribution lists, and sending to lists with off-network members.

Exchange 2010 adds some important changes for non-Internet Explorer browsers by officially and fully supporting both Firefox and Safari with its premium version of the Outlook Web Access client. In our testing, while Firefox and Safari do get a better experience than in the past, they aren't quite at parity with the Internet Explorer experience. For example, a number of features — such as MailTips and drag-and-drop of attachments – simply don't work. Additionally, Exchange 2010 managed to crash our Safari browser several times. Some of these issues will likely be resolved as Exchange 2010 moves from beta to full release.

Some of the most interesting features on the user side relate to the ability for users to control their own environments. Microsoft has moved a number of controls out to the user, a significant trend in a world where users are more comfortable with collaboration tools than ever before. This movement is driven in part by Exchange's push into hosted e-mail services, in which user self service is an expected feature.

In Exchange 2010, these self-service features are spilling over into the corporate environment as well. Exchange managers can now allow users to update their address information, search for delivery reports on messages they've sent or received, and manage and moderate distribution lists. For enterprises that haven't given up on mailing lists handled through Exchange, these features should reduce help desk calls and significantly improve user satisfaction with their e-mail system. (Again, not all these features are available in browsers other than IE7.)

In our testing, the message tracking available to users could use some work — it provides little detail other than times that messages were submitted and then delivered, without really explaining where and how Exchange sent the message, especially when sending out to the Internet. However, given that users had none of this information in the past, this is a step forward.

If you've chosen to integrate Exchange into your IP-based telephony system, users will likely fall in love with another new feature: voice mail preview. When voice mail messages are received in Exchange, it attempts to create a text preview of the voice mail. This would let you preview your voice mail on a mobile device or a Web-based environment where audio isn't readily available. We haven't seen too many organizations link

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Product	Exchange 2010 Beta 1
Vendor	Microsoft www.microsoft.com/exchange/2010
Price	$499 for a 10-user; $995 for an unlimited user license.
Pros	Improved end-user experience, user self-service, simplified clustering, extended high availability and reliability features
Cons	Firefox and Safari better, but not fully, supported; more intensive resource usage on servers.

Exchange that closely to their IP PBXs, but Microsoft continues to provide reasons to consider making the connection.

Better scalability and control for administrators

While Exchange 2007 introduced a plethora of reliability and scalability features, Exchange 2010 helps to clean up a confusing set of options. E-mail managers looking for guidance on building distributed Exchange networks will be pleased to see what has been pushed into Exchange 2010.

The biggest change for administrators in Exchange 2010 is an extended but simplified capability to distribute different user mailboxes across different servers, and keep those servers highly available. The binding of message stores to physical servers has been loosened considerably, and network managers should now easily be able to replicate a message store — as many as 16 copies are supported — across multiple servers, with automatic failover capability between servers.

We built two different mailbox servers and then created a "database availability group", a new concept in Exchange 2010 that replicates a message store database between two servers. We then disconnected one of the servers from the network and tested that the other copy of the database was still available. Compared with the more confusing set of options for local and remote replication in Exchange 2007, this was much easier to set up and had an easier recovery path.

Of course, having two copies of the message store doesn't help if you don't build other resiliency, such as multiple client access servers, into your deployment, so this new feature isn't going to be the last word in simplified reliability. Clustering can be an important part of a high-availability solution as well, and Exchange 2010 should simplify that tremendously. In Exchange 2007, Windows Server clustering was managed very separately from Exchange, which required additional expertise and a different skill set from what the standard e-mail manager holds. Exchange 2010 doesn't entirely solve this, but does move cluster management directly into the Exchange management system. Some e-mail managers are reluctant to use clustering because they don't understand it and don't know how to manage and control it; by moving this important part of a high-reliability system directly into Exchange, Microsoft makes it more likely that managers will be able to use clustering successfully.

A nice improvement on the scalability front is the ability to move a mailbox between databases without shutting it down. In Exchange 2007, moving message store mailboxes from one database to another could require a significant amount of downtime. In Exchange 2010, you move a mailbox that is in active use between message store databases. This lets the e-mail manager balance the load across servers and disk subsystems without making mailboxes unavailable. Having this feature will also let e-mail managers resist the temptation to build many small message databases rather than a few larger ones, because there's no need to try and predict how big each mailbox and message store database is going to be for load-balancing purposes.

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will produce more carbon in a year than the
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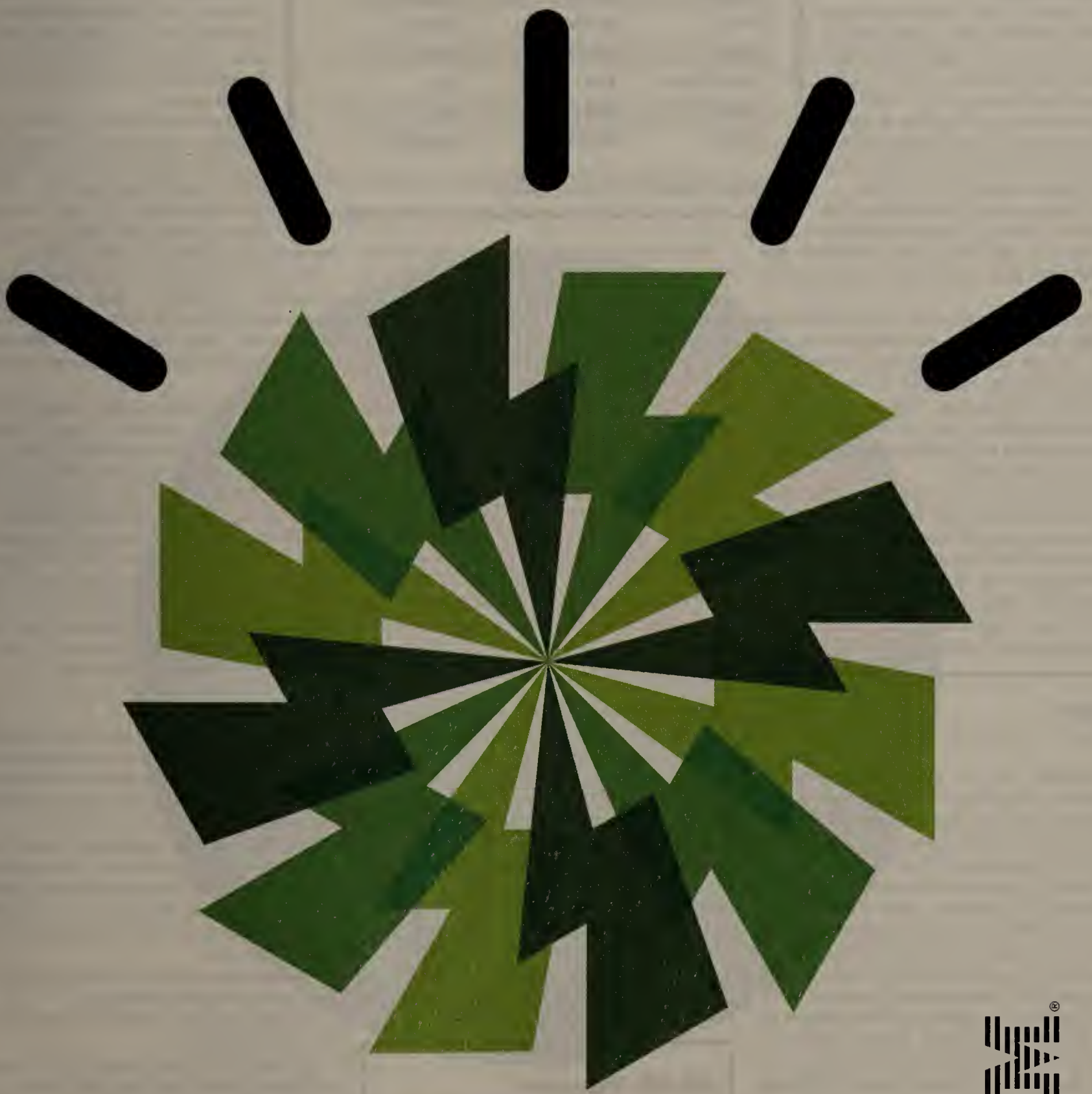
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Networx

federal agencies said they would choose carriers through a competitive process dubbed "fair opportunity" by Sept. 30, 2008. That deadline came and went, with only a handful of agencies such as the Department of Homeland Security and Treasury making moves to migrate from their predecessor FTS 2001 telecom contracts to the Networx program.

As of April 15, only 26% of the largest federal agencies have made awards under the Networx program, GSA says. Not even half of them — 41% — have begun transitioning to the new contract, according to GSA. This is significant because the top 25 agencies that GSA tracks represent 95% of the business volume expected on Networx.

In a March report, GSA identified less than $650 million in Networx contract awards — a small share of the $4 billion that should have gone to Networx contractors by now.

"Where we are right now is not where we thought we'd be when we awarded the contract," admits Karl Krumbholz, director of Network Services Programs in the Office of Integrated Technology Services at GSA's Federal Acquisition Service. "The agencies are now saying that all of their orders are going to be in by April 1, 2010."

Carriers say GSA's Networx sales figures are too conservative, and that they have won three or four times more Networx business than GSA is reporting. (See Networx sales chart). But the carriers agree that the Networx transition is running way behind schedule, and that they haven't earned anywhere near the revenues that they originally envisioned.

Networx sales

Estimates vary on how much business has been done under the federal Networx program, but everyone in the federal IT market agrees that the 10-year deal is coming up short of the $4B in sales that was projected by now. Below is a list of how much business has been awarded on Networx according to GSA and the carriers:

Carrier	GSA estimate*	Carrier Estimate**
Verizon	$261M	$1,643M
AT&T	$249M	$700M
Qwest	$135M	$135M
Sprint Nextel	$2M	N/A
Level 3	N/A	N/A
Total:	**$647M**	**$2,478M**

SOURCE: *GSA FAIR OPPORTUNITY REPORT, MARCH 2009 ** FROM PRESS RELEASES OR PUBLIC STATEMENTS ISSUED BY THE CARRIERS.

"The transition is much more complex than [GSA] had anticipated, and as a result it is behind what they projected," says Bill White, vice president of federal programs with Sprint.

Diana Gowen, senior vice president and general manager of Qwest government services, agrees. "We will have enough years on the back end of the contract to start seeing the implementation of new solutions, technologies and a bigger spend on Networx'" she says. "Failure-no, but soooo....slow."

Despite the Networx program's slow start, GSA and the carriers remain optimistic that the deal will eventually be worth $20 billion or more as agencies migrate all of their telecom services off FTS 2001 onto Networx. They hope to grow wireless traffic, sell additional managed security services and attract more military customers.

"If you get awarded a contract that's worth half-a-billion, chances are it will double or triple over the course of the Networx cycle because people will need to add services, and security will expand," says Susan Zeleniak, group president of Verizon Federal. "We're seeing a growing need for things like storage and data center hosting. Telecommuting … is an application of Networx that hasn't even begun to take hold yet but I'm certain it will."

Conceived by GSA in 2003, Networx is the latest in a series of umbrella contracts that have provided low-cost telecom services to 135 federal agencies domestically and abroad for the last two decades.

Networx replaces FTS 2001, which carries an estimated $1 billion a year in voice, data and video traffic. FTS 2001 contractors include Verizon Business, Sprint, AT&T and Qwest, and these carriers' FTS 2001 bridge contracts expire in May and June 2010.

Networx provides 50 telecom services, including long-distance and toll-free voice; frame-relay, ATM and IP data; cellular and satellite wireless; video and audio conferencing; call center, Web hosting and managed security services.

Agencies can choose to buy comprehensive, global telecom services through Networx Universal, which is held by AT&T, Qwest and Verizon Business, or ala carte services through Networx Enterprise, which is held by AT&T, Level 3, Qwest, Sprint and Verizon Business.

GSA says it's not sure how much money the largest 25 agencies have spent on Networx because they receive estimates from the agencies when orders are placed. GSA's $647 million figure is the agency's best guess of how much business agencies are planning to do on Networx right now, Krumbholz says.

What's next for Networx

Networx activity has grown in recent months. In January, less than 12% of the inventory items on FTS 2001 had been transitioned to Networx, GSA said. As of April 15, that number more than doubled to 26%, according to GSA.

In addition, several cabinet-level agencies — including the Social Security Administration, the Department of Health and Human Services and the State Department — are evaluating bids and plan to make large Networx awards by this summer.

"Things have ramped up significantly…in the first half of this year," White says.

GSA says Networx could still reach $20 billion in sales by 2017.

"We have every expectation that the contract will grow, and we don't feel that number is out of whack," Krumbholz says.

In the end, the true measure of success for Networx is how much money it saves the federal government, not how much money is spent on it, GSA says. ∎

Exchange

Exchange 2010 is also internally more resilient to failures, with the ability to automatically route around and retransmit messages lost by a malfunctioning transport hub.

As with Exchange 2007, Microsoft is requiring 64-bit hardware and operating systems for Exchange 2010. Our beta copy was 64-bit only. This more efficient use of hardware is coupled with better use of the I/O subsystem. Microsoft claims that Exchange 2010 not only does fewer I/O operations for the same workload, but also smoothes out the workload so that Exchange 2010 will behave better on lower-speed SATA drives. Microsoft says these new features will enable larger Exchange deployments to use less-expensive hardware.

Overall, these many reliability and scalability features add up to a significant shift in thinking on how to build large and reliable mail systems. Rather than focus on very expensive storage-area networks and ultra-huge servers, the combination of clustering, replication and low-cost disk support means that reliability and scalability can be based on replicating small, inexpensive servers. E-mail managers thinking of deploying Exchange 2010 should evaluate closely these new grid-style architectural approaches — and be sure that your Exchange team has adequate time to re-think and re-evaluate commonly held beliefs on how to build large Exchange networks.

Snyder is a senior partner at Opus One, a consulting firm in Tucson, Ariz. He can be reached at Joel.Snyder@opus1.com.

ONLINE: Slideshow

Look through the different aspects of Exchange 2010.

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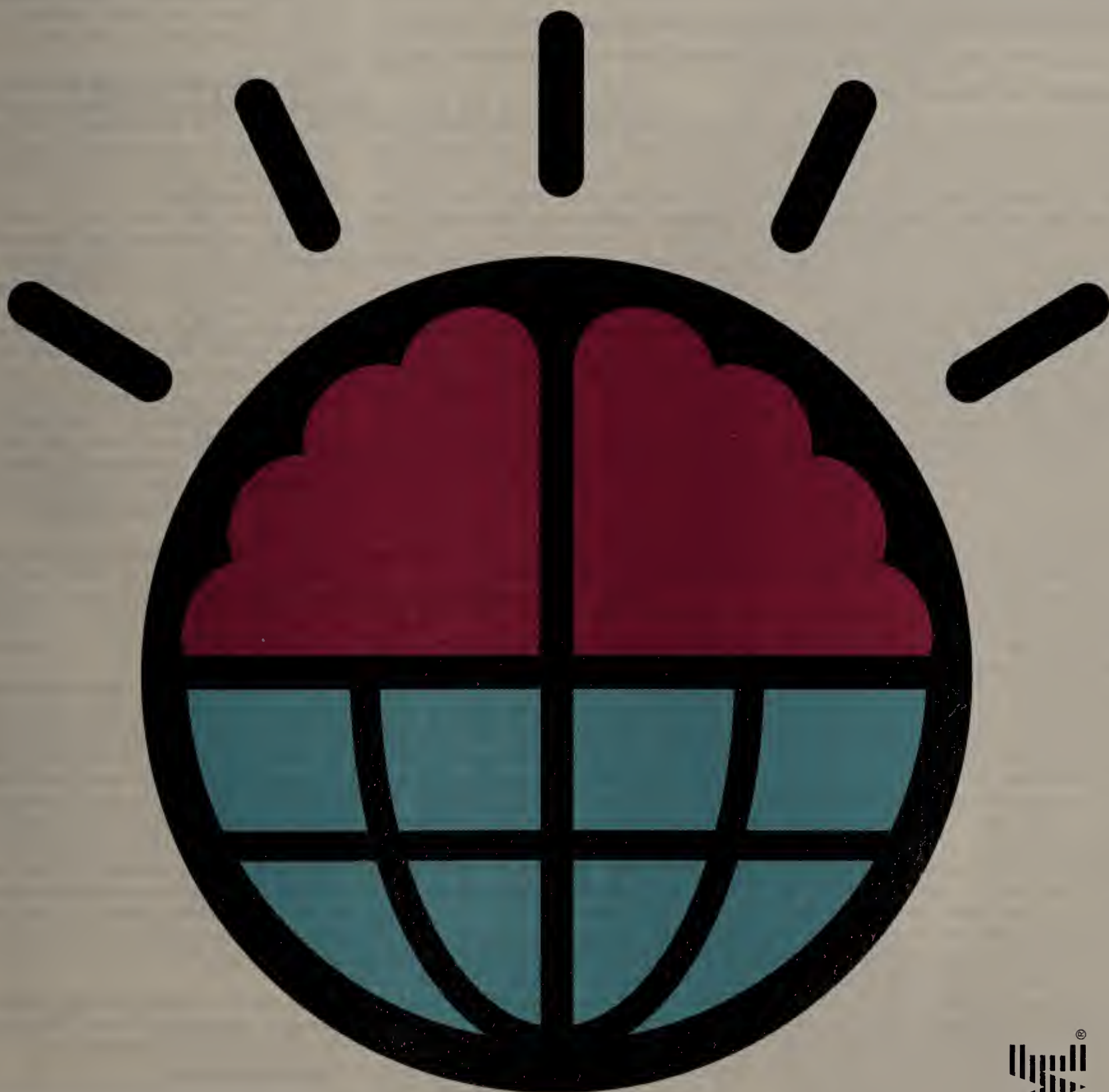
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Onshoring has its benefits

BY PAUL GASPARRO

The discussion about outsourcing continues to be an on-again, off-again affair — that is, onshore and offshore. Certainly the basic value of outsourcing has been well documented. Benefits range from dramatic cost savings to reduction of inventory and allowing companies to focus on core competencies. What is still up for debate, however, is whether to adopt an onshore or offshore approach.

While each approach has distinct merits, it is instructive to examine specific outsourcing scenarios to determine which line of attack is optimal. For example, if you are a North American company seeking to outsource development of a prototype for a new high-tech offering, or software development for a major upgrade, the onshore strategy is a better method. Lets examine the rationale.

Practical experience: Talent available onshore is extensive in certain domains. For example, if you're developing video games, the United States and Canada offer a wealth of experts. Or consider biotechnology: the competency of the human capital in this area is beyond reproach. In fact, the availability of expertise in North America for virtually any high-tech sector — especially telecommunications and networking — is unsurpassed.

The North American professionals also know how to commercialize that technology for specific customers and markets.

Intellectual property protection: Protecting intellectual property (IP) is vital when using an outsourcer to work on a proprietary project. Many countries abroad — most notably in the Far East — have a reputation for not fully observing copyright laws and legislation relating to IP protection. This is a concern when dealing with any proprietary information; it is magnified when the IP revolves around a company's core competency or technology foundation.

While breaches can occur anywhere in the world, it is less likely to happen in the North American market, where the legislation is stronger and enforced with far greater passion.

Location, location, location: One of the key reasons why onshore outsourcing is frequently a better option is proximity. When your outsourcer is only a few hundred miles or even a thousand miles away, you can hop on a plane for an in-person meeting. Taking a trip to India is neither convenient nor economical, which discourages the face-to-face interaction that can become critical if a project begins to veer off-course.

Time is a close relative of distance. In North America you are never separated from your outsourcer by more than four time zones, so it

is relatively simple to set up a conference call. Now try booking a call between New York and China. At least one of the parties will likely be forced to get up too early or go to bed too late.

Language barriers: One of the most obvious quandaries of an offshore setup is the language issue. Even if an overseas outsourcer's key personnel speak English, they may not be versed in the quirky phrases and local dialects that can make English hard to comprehend.

It's been said of America and England that they are two countries separated by a common language. If a North American company elects to use an overseas outsourcer, both parties may be speaking English, but from a practical perspective, the message could be misunderstood.

Design culture: Besides language, there is a difference in design cultures — the actual product development approach — that can make offshore outsourcing less attractive.

In North America and Western Europe, there is typically a great deal of communication between the client and outsourcer. For example, the marketing person might say, "I think this product should be this shape." An experienced North American outsourcer could counter with, "I know you want it to be that shape, but if it were this shape it would go faster." The interaction results in the highest quality and most desirable outcome.

In some cultures, particularly in the Far East, the norm is to develop what you are told. Often, that means plodding forward without offering feedback. Ultimately, this will result in a product that meets the specifications, but which does not perform as the customer expected. The creative pushback does not occur, resulting in multiple iterations that increase project cost while potentially delaying product delivery.

Political/financial stability: All it takes is a quick glance at any newspaper to see the turmoil around the world — a terrorist attack here, a coup d'etat there. What's more, many foreign countries are suffering through economic crises that make the current problems in the United States pale in comparison.

Needless to say, these instances have ramifications that are far more worrisome than the

effect they might have in the outsourcing community. Still, these are elements that must be considered before looking abroad for assistance in bringing a product to market. In a research report published by Black Book Research and Brown-Wilson Group, Canada ranks as one of the top 10 safest countries in the world to do outsourcing. India ranked in the bottom 10.

Total project cost: From a dollar perspective, the lure of offshore outsourcing can be particularly potent. The cost of labor in India, for instance, may be only 40% to 50% of the going rate in Canada; in China, it may be as low as 25% of that same cost.

However, the cost benefit has to outweigh all the issues outlined above. And there are often hidden costs. If there are language issues, for example, you may have to incur the cost of interpreter services.

The cost of overall project management is another variable that must be accounted for. Far less management is typically required when using onshore resources. But it is even more closely correlated to the experience factor than anything else. Because the offshore team may be less experienced in the specific development or market area the customer is seeking, tighter project management and oversight will be required.

It should also be noted that in Canada, R&D tax credits cut as much as 70% of the cost of developing technology. This allows companies to counter the low labor costs that offshore oursourcers use as one of their competitive advantages.

In the right situations offshore outsourcing makes sense, such as in high-volume manufacturing, product testing or fixing a problem vs. creating a product from scratch. But if you're a North American company designing a brand-new product, creating a prototype, or doing something that's out of your company's primary area of expertise, you should be looking at onshore very seriously. With an experienced staff, close proximity, negligible time difference and real-time interaction, the discussion of onshore vs. offshore should be an open and shut case.

Gasparro is co-founder and vice president of business development for MapleWorks Technology. He can be reached at paul.gasparro@mapleworks.com

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Analyzing Twitter with Excel, Part 3

GEARHEAD
Mark Gibbs

For the last two weeks I've been considering how to analyze Twitter messages using Excel 2003. Having been thwarted by the deficiencies of Excel and Twitter (turns out that Twitter Search returns malformed HTML and Excel won't tolerate that) I have a new plan: Let's use cURL to retrieve the raw XML returned by Twitter search and haul that data into Excel.

CURL is a free open source tool that lets you perform data transfers specified by URLs (I give cURL 5 out of 5). For some background on cURL check out www.nwdocfinder.com/9623.

I'm going to use cURL to retrieve the Twitter Search data for a specific day. I can't do this efficiently in Excel using XML Maps because once you have defined an XML source you can't easily change it. You can change the XML Map URL through Visual Basic for Applications, but messing with VBA is how people descend into madness.

That said, I'm not sure that madness isn't a consequence of all software engineering and, in this case, the solution is going to be ugly because we're forcing weakly structured content to do handstands.

Anyway, I'm going to employ cURL to retrieve the content from Twitter search using a batch file (I've wrapped the line below for readability — you should combine the lines into a single line with no spaces in the text between the double quotes):

```
curl "http://search.twitter.com/search?q=rovio
    &since=%1&until=%1&rpp=100&page=1" -o tweets%1-1.htm
```

If the batch file is called, say, getrovio.bat, then the command line for this request would be of the form "getrovio 2009-04-01". This will get just the first page of matching Tweets for April 1, 2009.

Now if the term we're searching for is really popular we're going to need to run the search multiple times, but here's the problem — Twitter will return a Web page even when there's no data so we need to analyze the content to look for the string "no results", which is what Twitter will report. So, we're going to use grep on the output file:

```
grep "no results for" tweets%1-1.htm
```

If grep can make a match it will set the errorlevel to 1 while no match will result in an errorlevel of 0.

Assuming we might need, say, 5,000 results for a really popular search term, we need to ensure we loop through the curl and get the Tweets up to 50 times. Here's how we'll do it (note that I've used the environment variable 'counter' as the page index and I've split the curl command over two lines for readability):

```
@echo off
set counter=0
:start
set /a counter+=1
echo %counter%
curl "http://search.twitter.com/search?q=rovio&since=%1&until=%1
    &rpp=100&page=%counter%" -o tweets%1-%counter%.htm
grep "No results for" tweets%1-%counter%.htm
echo %errorlevel%
if %counter% == 10 goto :next
if %errorlevel% == 0 goto :next
goto :start
:next
```

When we create another batch file to call the batch file above and provide a list of dates we're interested in we can run it and have a collection of files named 'tweetsYYYY-MM-DD-N.htm'. We'll do that and start to extract stats … next week.

Gibbs can be reached at gearhead@gibbs.com.

Sharing USB devices easily

Keith Shaw
COOLTOOLS

The scoop: Four-port USB Net ShareStation (model GUIP204), by logear, about $85.

What it is: This handy little device is designed to connect to your home router or a switch (either wired or wireless) and as many as four different USB-enabled devices. With the Share-Station connected to the router, any PC on the home network can access those USB-enabled devices from anywhere on the network. The Share-Station supports USB printers (including multifunction printers), Webcams, speakers and external storage drives.

Why it's cool: I've been looking for a way to share a multifunction printer that I own with multiple PCs within my home, and some of the network-attached storage (NAS) devices that I'm testing won't support the multifunction printers with their print servers. With the ShareStation, it was very easy to connect it to an open port on my switch (connected to my wireless router), and then attach the multifunction printer and an external storage drive to the ShareStation. The real selling point is that I can work upstairs on my notebook and wirelessly print to the multifunction printer without worrying about setting up the printer as a network printer or shared printer or any of that junk. In the eyes of my PC, the printer is sitting right next to me instead of downstairs next to the router.

Having support for an external storage drive also turns those drives into an inexpensive NAS device — multiple users can access the USB drive for copying files or backing up their systems. And the support for USB Webcams means you can create a "security" system by attaching the

logear's USB Net ShareStation lets you connect your home router to as many as four USB-enabled devices.

USB Webcam to the ShareStation and watch the camera from somewhere else on the home network.

Some caveats: The setup was a bit wonky — I had to install/reinstall once before the system recognized everything. In addition, each PC that needs to access the USB devices needs the logear client software and driver for the ShareStation. In addition, they will need any USB device driver software, such as the printer drivers or the USB Webcam software,.

The other major point is that the system does not support concurrent multiple users. If one PC is "connected" to the printer, a second PC cannot use that device until the first user "disconnects". This is different than a NAS box or network printer, in which multiple users can access the device at the same time. But at least this method is easier to set up.

Also, there are different methods for accessing the ShareStation depending on whether you're using a Windows XP or Vista system. On XP, you use client software to access the device; on Vista, you have to open the "network" window, then choose the specific device. Disconnecting from the USB device on the ShareStation also requires a few steps — when you disconnect from the hard drive, for example, you have to remember to do the "safely remove hardware" action in Windows first, then access the "disconnect" menu. Finally, I would have liked to see Macintosh support (at least for the printer and storage drive), so my wife's Mac can access these USB devices (maybe a firmware update will fix that, fingers crossed).

Grade: ★★★★ (out of five)

Shaw can be reached at kshaw@nww.com. Follow him on Twitter at http://twitter.com/shawkeith.

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BRIDGE TO TERABIT ETHERNET

■ 40/100Gigabit Ethernet products to ship by year-end; terabit speeds anticipated by 2015

BY JIM DUFFY

IT managers who are getting started with — or even pushing the limits of — 10 Gigabit Ethernet in their LANs and data centers won't have to wait long for higher speed connectivity. Pre-standard 40/100G Ethernet products — server network interface cards, switch uplinks and switches — are expected to hit the market later this year. And standards-compliant products are expected to ship in the second half of next year, not long after the expected June 2010 ratification of the 802.3ba standard.

The IEEE, which began work on the standard in late 2006, is expected to define two different speeds of Ethernet for two different applications: 40G for server connectivity and 100G for core switching.

Despite the economic slowdown, global revenue for 10G fixed Ethernet switches doubled in 2008, according to Infonetics. And there is pent-up demand for 40G and 100G Ethernet, says John D'Ambrosia, chair of the 802.3ba task force in the IEEE and a senior research scientist at Force10 Networks.

"There are a number of people already who are using link aggregation to try and create pipes of that capacity," he says. "It's not the cleanest way to do things... [but] people already need that capacity."

D'Ambrosia says even though 40/100G Ethernet products haven't arrived yet, he's thinking ahead to Terabit Ethernet standards and products by 2015. "We are going to see a call for a higher speed much sooner than we saw the call for this generation" of 10/40/100G Ethernet, he says.

According to the 802.3ba task force, bandwidth requirements for computing and core networking applications are growing at different rates, which necessitates the definition of two distinct data rates for the next generation of Ethernet. Servers, high-performance computing clusters, blade servers, storage-area networks and network-attached storage all make use of 1G and 10G Ethernet, with 10G growing significantly in 2007 and 2008.

I/O bandwidth projections for server and computing applications, including server traffic aggregation, indicate that there will be a significant market potential for a 40G Ethernet interface, according to the task force. Ethernet at 40G will provide approximately the same cost balance between the LAN and the attached stations as 10G Ethernet, the task force believes.

Core networking applications have demonstrated the need for bandwidth beyond existing capabilities and beyond the projected bandwidth requirements for computing applications. Switching, routing and aggregation in data centers, internet exchanges and service provider peering points, and high bandwidth applications such as video on demand and high-performance computing, need a 100G Ethernet interface, according to the task force.

"Initial applications [of 40/100G Ethernet] are already showing up, in stacking and highly aggregated LAN links, but the port counts are low," says George Zimmerman, CTO of SolarFlare, a maker of Ethernet physical layer devices.

Zimmerman says 10G is just now taking off in the access layer of large networks and will eventually move to the client side, creating the need for

1973
Bob Metcalfe writes memo to bosses at Xerox describing design for Ethernet at 3Mbps over shared coaxial cable.
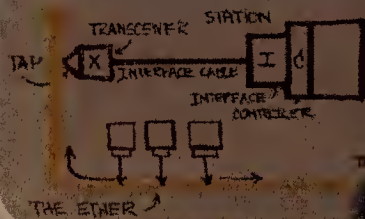
1976
Metcalfe and David Boggs publish first paper: "Ethernet: Distributed Packet-Switching for Local Computer Networks."

1986
IEEE publishes standard for 10Base-5 Ethernet (think coax).

Standard for 10Base-2 (thin coax).

1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993

3COM
1979
Metcalfe leaves Xerox. Forms 3Com

1980
Metcalfe publishes standard for 10Mbps Ethernet, known as DIX standard (Digital, Intel, Xerox).

1985 ◆ **IEEE**
IEEE takes over standards process; publishes its first Ethernet standard, 802.3.

1989
Kalpana introduces first Ethernet switch (replaced bridges and hubs).

40/100G in the distribution layer and the network core.

He says the application of 100G Ethernet in the core is imminent, and is about two years away in the distribution layer. "Both will be driven by and drive 10G adoption in the access and client end of the network, where today the numbers are still much smaller than the potential," he says

Spec designed for seamless upgrades

The 802.3ba specification will conform to the full-duplex operating mode of the IEEE 802.3 Media Access Control (MAC) layer, according to the task force. As was the case in previous 802.3 amendments, new physical layers specific to either 40Gbps or 100Gbps operation will be defined.

By employing the existing 802.3 MAC protocol, 802.3ba is intended to maintain full compatibility with the installed base of Ethernet nodes, the task force says. The spec also is expected to use "proven and familiar media," including optical fiber, backplanes and copper cabling, and preserve existing network architecture, management and software, in an effort to keep design, installation and maintenance costs at a minimum.

Even though the 802.3ba standard is not expected to be ratified until June 2010, initial interoperability testing will commence later this year, says Brad Booth, chair of the Ethernet Alliance. Public demonstrations will emerge in 2010, and certification testing will start once the standard is ratified, Booth says

The specification and formation of the 40/100G task force did not come without some controversy, however. Participants in the Higher Speed Study Group (HSSG) within the IEEE were divided on whether to include 40G Ethernet as part of their charter or stay the course with 100G.

After about a month, the HSSG agreed to work on a single standard that encompassed both 40G and 100G.

"In a sense, we were a little bit late with this," D'Ambrosia says. "By our own projections, the need for 100G was in the 2010 timeframe. We should have been done with the 100G (spec)

probably in the 2007-08 timeframe, at the latest. We actually started it late, which is going to make the push for terabit seem early by comparison. But when we look at the data forecasts that we're seeing, it looks to be on cue."

Driving demand for 40/100G Ethernet are the same factors currently stoking 10G: data center virtualization and storage, and high-definition videoconferencing and medical imaging. Some vendors are building 40/100G Ethernet capabilities into their products now.

Vendors prepare for 100G

Cisco's Nexus 7000 data center switch, which debuted early last year, is designed for future delivery of 40/100G Ethernet.

"We have a little more headroom, which isn't bad to have when you look at future Ethernet speed transitions coming in the market," says Doug Gourlay, senior director of data center marketing and product management at Cisco. "We're pretty early advocates of the 100G effort in the IEEE. [But] the earliest you'll see products from any company that are credible deliveries and reasonably priced: second half of 2010 onward for 40/100G."

Verizon Business last fall began offering 10G Ethernet LAN and Ethernet Virtual Private Line services to customers in 100 U.S. metro markets. Verizon Business also offers "10G-capable" Ethernet Private Line services.

The carrier has 40G Ethernet services on its five-year road map but no specific deployment dates, says Jeff Schwartz, group manager, Global Ethernet Product Marketing. Instead, Verizon Business has more 10G Ethernet access services on tap for later this year.

"We want to get to 100G," Schwartz says. "40G may be an intermediary step."

Once Verizon Business moves its backbone architecture towards 40/100G, products and services will be following, he says.

Spirent Communications, a maker of Ethernet testing gear, plans to release a 40G Ethernet testing module in the second half of this year, and 100G Ethernet modules in early 2010, says Tim Jefferson, general manager of the converged core solutions group at Spirent. Jefferson says one of

the caveats that users should be aware of as they migrate from 10G to 40/100G Ethernet is the need to ensure precise clocking synchronization between systems — especially between equipment from different vendors.

Imprecise clocking between systems at 40/100G — even at 10G — can increase latency and packet loss, Jefferson says.

"This latency issue is a bigger issue than most people anticipate," he says. "At 10G, especially at high densities, the specs allow for a little variance for clocks. As you aggregate traffic into 10G ports, just the smallest difference in the clocks between ports can cause high latency and packet loss. At 40G, it's an order of magnitude more important than it is for 10G and Gig.

"This is a critical requirement in data centers today because a lot of the innovations going on with Ethernet and a lot of the demand for all these changes in data centers are meant to address lower latencies," Jefferson adds.
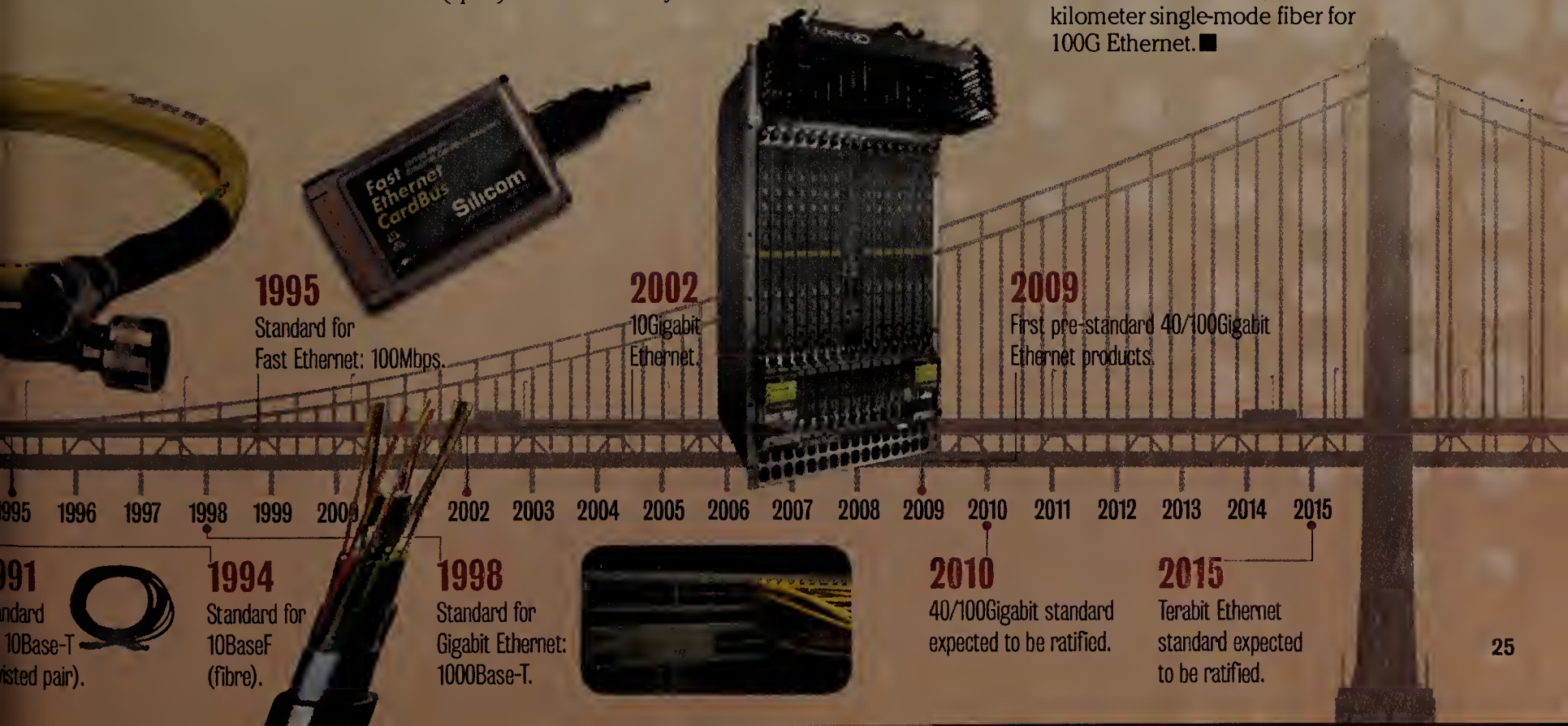
Another challenge is readying the cabling infrastructure for 40/100G, experts say. Ensuring the appropriate grade and length of fiber is essential to smooth, seamless operation.

"The big consideration is, what's a customer's cabling installation going to look like and what they're looking for to be able to handle that," Booth says. "They are probably going to need to have a parallel fiber capability."

"The recommendations we're making to customers on their physical plant today are designed to take them from 1G to 10G; 10G to a unified fabric; and then address future 40G," Cisco's Gourlay says.

The proposed physical interfaces (PHY) for 40G Ethernet include a range to cover distances inside the data center up to 100 meters, to accommodate a range of server form factors, including blade, rack and pedestal, according to the Ethernet Alliance. The 100G Ethernet rate will include distances and media appropriate for data center, as well as service provider interconnection for intra-office and inter-office applications, according to the organization.

The proposed PHYs for 40G Ethernet are 1 meter backplane, 10 meter copper and 100 meter multimode fiber; and 10 meter copper, 100 meter multimode, and 10 kilometer and 40 kilometer single-mode fiber for 100G Ethernet. ∎

1995 Standard for Fast Ethernet: 100Mbps.

2002 10Gigabit Ethernet.

2009 First pre-standard 40/100Gigabit Ethernet products.

995 1996 1997 1998 1999 2000 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

991 ndard 10Base-T sted pair).

1994 Standard for 10BaseF (fibre).

1998 Standard for Gigabit Ethernet: 1000Base-T.

2010 40/100Gigabit standard expected to be ratified.

2015 Terabit Ethernet standard expected to be ratified.

3Com's high-end switch: A fast, green alternative to Cisco

New core switch tests show high unicast scalability, low power use

BY DAVID NEWMAN, NETWORK WORLD TEST ALLIANCE

3Com says it has an alternative for network managers considering high-end switches from Cisco and others. Our exclusive Clear Choice test of its new core switch backs up 3Com's claim. This chassis-based, 288-port device delivered line-rate throughput in all performance tests, supported more Open Shortest Path First (OSPF) routing sessions than we've ever set up and consumed remarkably little power.

While the device we tested doesn't have all the features of some competitors (for example, the switch doesn't yet support hitless upgrades), its strong performance and low power consumption make it a viable option for large and midsize organizations in the market for core and aggregation switches.

One switch, two names

3Com sells the system we tested under two names: the 3Com S7906E and the H3C S7506E. That's kind of a mouthful, so we'll refer to this system as the "3Com/H3C switch" going forward. (3Com became sole owner of H3C after buying Huawei's share of the former joint venture a couple of years ago. See story at www.nwdocfinder.com/9523.)

3Com supplied a chassis with six line cards, each with 48 gigabit Ethernet ports that use SFP transceivers for copper or fiber. The company says it is developing less costly gigabit Ethernet cards with integrated copper transceivers. It already ships larger (10-slot) and smaller (two- and three-slot) versions of the same switch. In 3Com's terminology, the slot counts refer to the number available for line cards; each chassis has two additional slots for redundant management modules.

The chassis 3Com supplied scales up to 288 gigabit Ethernet ports, but only 16 10G Ethernet ports. While the gigabit port count is relatively high, the 10G Ethernet number is not. Competing Cisco Catalyst 6509 and Nexus 7010 switches house up to 130 and 256 10G-Ethernet cards, respectively, in similar configurations with dual fabric cards.

3Com's competitors may claim the lower 10G Ethernet port density "proves" this is a smaller switch than some of its rivals, but results from our unicast performance tests don't support that conclusion: A 3Com/H3C chassis fully loaded with gigabit ports moved mid- and large-size frames only slightly slower than a Cisco Catalyst 6509 fully loaded with 10G Ethernet ports, and went faster than the Cisco box with short frames. While there are some apples-to-oranges problems with this comparison (the tests were done at different times, for starters), it's not automatically the case that lower density means lower performance.

We also asked 3Com to complete an extensive features questionnaire as part of our features evaluation (see 3Com features chart at www.nwdocfinder.com/9525.) While we didn't verify every response on the questionnaire, we did validate that the system supports virtually all major switching, routing and management protocols.

One drawback is that the 3Com/H3C switch doesn't support hitless upgrades and downgrades of software images, a key feature supported in some competing switches. The vendor says it's working on a release that will add this capability later this year.

On the seventh test we rested

We tested the 3Com/H3C switch/router six ways, covering Layer 2 and Layer 3 performance, power consumption, features, manageability and usability (see "How we did it" at www.nwdocfinder.com/9524). We also

NETRESULTS

Product	3Com S7900E/H3C S7500E
Vendor	3Com www.3com.com
Price	$243,090 as tested (288 gigabit Ethernet ports; dual management modules and power supplies)
Pros	Outstanding Layer 2 and Layer 3 unicast scalability and performance; low power consumption.
Cons	Lower 10G Ethernet density than competing products; no hitless upgrade support yet; multicast doesn't scale as high as competing products.
Score	4.28

SCORECARD

Action	Weight	
Layer-2 unicast performance	20%	**5.0**
Layer-3 unicast performance	20%	**5.0**
Layer-3 multicast performance	20%	**3.0**
Power consumption	15%	**5.0**
Features	15%	**3.5**
Switch management and usability	10%	**4**
Total score		**4.28**

Scoring key: 5: Exceptional; **4:** Very good; **3:** Average; **2:** Below average; **1:** Subpar or not available.

planned a seventh test, measuring Layer 2 performance between a pair of 10G Ethernet ports, but time constraints prevented us from completing that event.

In Layer 2 unicast testing, we usually configure a Spirent TestCenter traffic generator/analyzer to emulate one or more hosts on each port, and then measure how fast the switch forwards frames between each port (throughput) and how long it takes for each frame to arrive (latency).

That's what we did here, but with a twist: We configured Spirent TestCenter to 900 unique media access control (MAC) addresses on each port, for a staggering 259,200 unique addresses and more than 74 million flows.

That's an enormous number of MAC addresses. While no sane network architect would design a single flat Layer 2 network supporting even 1/20th that many hosts, scalability to such high levels is important for a core switch. It's possible that a switch configured with hundreds or thou-

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3Com

sands of virtual LANs might need to learn tens or even hundreds of thousands of MAC addresses, as the 3Com/H3C device did here.

The switch proved highly scalable in terms of Layer 2 data-plane forwarding. Regardless of frame size - from short 64-byte frames to 9,216-byte jumbo frames — the switch delivered line-rate throughput in all tests involving a fully meshed pattern between all 288 gigabit Ethernet ports (see table below).

Average and maximum latency — key metrics for real-time applications involving voice and video — were also remarkably low and consistent. For example, average latency with 64-byte frames was around 6.5 microsec. That's around half the number we measured with Cisco's Catalyst 6509 using 10G Ethernet interfaces, not gigabit, and running at 10% of line rate (both factors that should result in significantly lower latency). Further, maximum latencies were not far above the averages, suggesting the 3Com/H3C switch keeps jitter (delay variation) to a minimum, offering more protection for real-time applications.

In assessing Layer 3 scalability, we measured results both at the control plane — in terms of the number of Open Shortest Path First (OSPF) sessions and the number of routes per session — and at the data plane, as in our Layer 2 tests. The control-plane numbers were staggering: We brought up 288 adjacencies (OSPF-speak for "session") and advertised more than 200,000 routes before sending traffic to all routes.

To get a sense of the scale of these numbers, consider that the largest service provider networks might build OSPF databases comprised of 50,000 or fewer networks. For even large enterprises the typical routing table is far smaller, usually on the order of hundreds to thousands of routes. Also, the 288 concurrent OSPF sessions represent the largest scale *Network World* has attempted in any test published.

As in the layer-2 assessment, the 3Com/H3C device again passed all tests with flying colors. Throughput across 288 ports was line rate for 64-, 256-, 1,518- and 9,216-byte frames, even though the switch/router had to contend with simultaneous data-plane traffic (always offered at line rate on all ports) and higher-priority control-plane traffic (the OSPF messages that must get through for routing to work).

Some buffering is necessary for the switch/router to forward both data- and control-plane traffic at line rate, and that showed up in the latency results. Average latency was between two and seven times higher than in the Layer 2 unicast tests, depending on frame size.

That's not surprising given the contention between test traffic and OSPF packets at line rate, but not necessarily a cause for concern. The latencies again compare favorably with those from tests of large Cisco switch/routers (even though we tested the Cisco boxes with 10G interfaces and measured delay at 10% of line rate, both factors that should have favored the Cisco switch).

Moving multicast

The 3Com/H3C turned in perfect multicast data-plane numbers. However, multicast control-plane scalability is one area where Cisco retains an edge over the 3Com/H3C device.

A key metric, besides throughput and latency, is mroute capacity, or the number of source/group combinations a device can support. This is especially important for videoconferencing or streaming quote services, where multicast may be used to carry messages among thousands of users.

In layer-3 multicast tests of Cisco's Catalyst 6509 and Nexus 7010, we've tested with 10,000 mroutes, using a combination of 200 groups with 50 transmitters each. In contrast, the limit of the 3Com/H3C device is 4,096 mroutes. That's more than enough for small and midsize enterprises, and 3Com says it has larger systems under development, but it is a lower ceiling than the competing Cisco devices we've tested.

The 3Com/H3C device also limits the amount of multicast replication to any combination of groups times receiver ports that totals 4,096. We haven't hit a similar limit in testing other core switches.

On the other hand, the 3Com/H3C switch once again replicated all multicast traffic at line rate. As in the Layer 2 and 3 unicast tests, the device never dropped a frame in any of our multicast tests. Average and maximum latencies were significantly higher than in the unicast tests, but in line with most other switches and routers we've tested, and the numbers involved are not high enough to degrade application performance.

Going green

Our results validate 3Com's claim that low power consumption is a key differentiator for the 3Com/H3C device. We measured power usage three ways: When the switch was idle (but with cables connected to all 288 gigabit Ethernet SFPs); when the switch forwarded traffic across all ports at line rate, as in the OSPF tests; and when the switch forwarded traffic with an IP option. field set in every packet (thus forcing traffic up to the CPU in the switch's management module).

Total power consumption when idle was 927 watts, but jumped 25%, to 1,159 watts, when we offered data-plane traffic at line rate. With IP options set, consumption was slightly lower, at 1,101 watts, probably because this test exercised the management module's CPU far more than switching silicon on each line card.

While we don't have direct comparisons with other chassis-based switches to report, there is anecdotal evidence that competing switches consume 3,000 watts or

3Com core switch performance test results

The vchassis-based, 288-port device — marketed under two different names, the 3Com S7906E and the H3C S7506E — delivered line-rate throughput in all performance tests, supported more OSPF routing sessions than we've measured before and consumed very little power.

■ Layer 2 unicast testing (288 gigabit Ethernet ports, 259,200 MAC addresses)

Frame length (bytes)	Thereotical maximum (fps)	Throughput (fps)	Minimum latency (usec)	Average latency (usec)	Maximum latency (usec)
64	428,571,429	428,571,429	2.74	6.53	9.50
256	130,434,783	130,434,783	2.49	7.93	12.69
1,518	23,407,022	23,407,022	2.50	19.89	33.86
9,216	3,897,791	3,897,791	2.50	93.79	175.93

■ Layer 3 unicast testing (288 OSPF adjacencies, 259,200 summary link state advertisements)

Frame length (bytes)	Thereotical maximum (fps)	Throughput (fps)	Minimum latency (usec)	Average latency (usec)	Maximum latency (usec)
64	428,571,429	428,571,429	2.79	12.86	192.32
256	130,434,783	130,434,783	2.53	41.45	279.57
1,518	23,407,022	23,407,022	2.46	137.38	399.24
9,216	3,897,791	3,897,791	2.48	322.26	633.18

■ Layer 3 multicast testing (16 IGMPv3 groups, 48 transmitters/group, 240 receivers)

Frame length (bytes)	Thereotical maximum (fps)	Throughput (fps)	Minimum latency (usec)	Average latency (usec)	Maximum latency (usec)
64	357,085,747	357,085,747	5.69	22.05	38.74
256	108,678,298	108,678,298	7.22	59.60	112.38
1,518	19,502,746	19,502,746	18.83	308.38	598.55
9,216	3,247,642	3,247,642	89.80	1,826.57	3,564.02

CLEAR CHOICE TEST

ETHERNET SWITCH

more in similar configurations.

Further, 3Com supplied line cards that use external copper or fiber transceivers. These probably consume more power than gigabit line cards with integrated copper transceivers; 3Com says such cards are due for release later in the year.

Manageability and usability

For many network managers, ease of use and support for various management methods is at least as important a consideration as high performance. We assessed these areas by determining what management methods the switch supports, as well as noting subjective observations about ease of use in the course of setting up the performance tests.

The 3Com/H3C chassis-based switch supplied for testing scales up to 288 gigabit Ethernet ports, but only 16 10G Ethernet ports.

3Com does not attempt to clone the IOS command-line interface, as some other Cisco competitors do. Instead, the switch uses a relatively simple hierarchical interface with executive and configuration modes. The interface was easy to navigate. Context-sensitive help is available for all commands, and command syntax is uniform at least for the various operations we tried.

In terms of management methods, only HTTP and Secure-HTTP are enabled by default. Both require the prior creation of a username and password to grant access.

All other management methods — including SSH, telnet and the various versions of SNMP — must be enabled by the user. Note that enabling SSH turns on a server that supports both versions of the protocol. A second command is required to disable Version 1, which has known security vulnerabilities. IOS in Cisco Catalyst switches works the same way, and requires a second command to disable SSHv1.

The 3Com/H3C switch may not offer 100% of the features of competing high-end switches from Cisco and others. But in most areas it delivers excellent performance while drawing remarkably low power. 3Com, long absent from the high-end enterprise networking market in North America, is back with a credible enterprise switch.

Newman is president of Network Test, a benchmarking and network design consultancy. He can be reached at dnewman@networktest.com.

NEWS ANALYSIS

ING

upcoming RSA security conference advocating a set of security standards for use in the cloud market. Ideally, security will be built into every application, and portability of applications across clouds is also important, Boehme and the alliance say.

If clouds are interoperable, customers can at least move an application from one to another in case of failure, the alliance notes on its Web site. "Businesses using the cloud should be prepared for the worst," the group says.

But that doesn't mean avoiding the cloud makes sense, either, Boehme notes. ING already uses a mix of data centers operated by its own staff and data centers operated by third parties, he says. Cloud computing typically uses a multi-tenant, rather than single-tenant architecture, but that doesn't make it completely new and unfamiliar, he says.

Boehme has been with ING since August 2008, but has more than two decades of experience including stints as the CIO of Juniper Networks, Sage Software, and GE. Boehme recalls using the IBM mainframe Time Sharing Option earlier in his career, a feature that gives users concurrent access to the mainframe while making it appear to each user that no one else is on the system. "I didn't know who was on that mainframe," Boehme says. "But the security infrastructure, and the risk management was already built into that."

Cloud computing isn't as sophisticated as the decades-old mainframe technology, but Boehme is expecting great things. He predicts companies to use a mix of external cloud providers as well as so-called private clouds, with applications being portable across all platforms.

"We don't believe you will see anybody participate with a single provider," he says. "We think you will have multiple providers, internal clouds, external clouds, hybrid clouds. ... We like the concepts and the flexibility that this provides. We believe this is as big as the Web was in 2000." ■

RSA

And if the multitude of sessions at RSA isn't enough, the Jericho Forum, a user-based advocacy organization dedicated to driving improvements to security for e-commerce, will be holding its own mini-conference at a location within walking distance.

The Jericho Forum will be putting its spin on the security of cloud computing with the perhaps surprising belief that using a cloud can be more secure than running applications and databases out of corporate data centers.

The Jericho Forum doesn't believe that is the case today, but the potential for that level of security exists and should be pursued, says Adrian Seccombe, a member of the Jericho Forum Board of Management.

Working on a secure architecture while cloud services are still evolving is key, he says; security can't be added later and be effective.

Essential to that architecture is the ability to wrap data up as objects that can be assigned a security value. Access to and treatment of these objects would depend on the objects themselves rather than cloud infrastructure, Seccombe says. "The data knows who it should operate with," he says.

The conference will kick off Monday with a few focused tutorials, one being with the Trusted Computing Group (TCG), an industry organization that has designed several security specifications intended for use across vendor boundaries.

One of TCG's most important efforts has been the Trusted Platform Module (TPM) for hardware-based encryption capabilities. Joe McGinley, manager of global software security architecture at Diebold, a maker of Automated Teller Machines, will be on hand to describe how Diebold has added TCG's Trusted Platform Module, used with Wave Technologies management software, for public-key encryption security in automated teller machines. ■

NETWORKWORLD

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*Indicates Regional Demographic

Less freedom in the new digital world?

BACKSPIN

Mark Gibbs

Last week's column on the Internet Kill Switch generated a lot of feedback (vote on whether the president should have a kill switch at www.nwdocfinder.com/9631).

I need to clear up one thing: I wasn't suggesting right-wingers were behind the bill. What I was suggesting was hardcore right-wingers would likely be in favor of the bill. The fact that known liberals, one of them Democrat and the other Republican, are the source of the bill is bizarre to say the least.

Reader Anon asked, "It all hinges on the definition of 'United States critical infrastructure information system or network', doesn't it?"

Reader Alex Breeding is well versed on that topic having authored a paper for the SANS Institute that, in part, delved into what the government defines as critical infrastructure. He concludes that it covers just about everything that matters: roads, food production, health services, police and fire departments … the list is long and comprehensive.

Anon's brother, curiously also called Anon, opined that such a broad definition of critical infrastructure exists "perhaps to make the area of influence as wide as imaginable. Total government control as in Soviet Russia. Concentration camps may not be necessary, just shut down the colo [and the] traffic and you can kill opposition/competition forever."

A good friend, also preferring to be called "Anon", pointed out a possible reason for this ostensibly ridiculous bill being "kited": it's a way of softening up public perception so when there's a need to curtail specific Internet-mediated communications it can be pitched as being in the national interest and nobody will be surprised.

Anon theorizes that, should there be, for example, the beginnings of a serious run on the dollar, then shutting down "critical infrastructure" (which would include the banks and financial institutions) would allow the government breathing room by stopping transactions from being cleared. He refers to this shutdown as "the Big 404" because your bank, your broker and all of the other financial services you deal with would suddenly not be available for a day or two while the feds implement a control strategy.

Sound far-fetched? Well, maybe not so much when you consider other governmental scheming that's afoot. For a start there's the Anti-Counterfeiting Trade Agreement (ACTA). The negotiations for this international trade agreement between the G8 and others countries have been underway mostly in secret since 2007!

According to a report in the *London Telegraph* last year, ACTA would permit "IPods, mobile phones and laptops [to] be examined by airport customs officials for illegal downloads" without customs having cause. Until ACTA is ratified we won't know what is actually being agreed to and by then it will be too late. What happened to transparency?

Or how about the Obama administration's position on warrantless wiretapping? In a motion asking the court to dismiss the Electronic Frontier Foundation's case against the NSA, the administration is claiming that not only is the whole program a state secret but that the government is immune to litigation for what it has done.

As the EFF points out, the then-Sen. Obama lamented on the campaign trail that the Bush Administration "invoked a legal tool known as the 'state secrets' privilege more than any other previous administration to get cases thrown out of civil court."

A jaded, suspicious person might conclude from all of this scheming and opacity that when it comes to technology the government is in the process of assuming greater authority and softening us up for a brave new digital world where we have a lot less freedom.

Express your own ennui to backspin@gibbs.com.

Fact-checking the fact-checkers

Paul McNamara

NETBUZZ

News, Insights, oddities

What's your first thought when someone spreads an e-mail around the office claiming that Oprah is giving away a million bucks or that your penny-pinching state will no longer send out reminders about driver's license renewals?

Right: Better check Snopes.com to see if these things are true. (The first is not; the second is if you live in Massachusetts.)

Established in 1995, Snopes has long been the go-to Web site for running a rumor through the nonsense-detector, and its proprietors, David and Barbara Mikkelson, have assumed an almost mythic stature as the most authoritative discoverers of truth and falsity online.

But who's checking the fact checkers?

Recently it was a similar but more narrowly focused outfit, FactCheck.org, which is funded by the Annenberg Foundation and describes itself as "a nonpartisan, nonprofit consumer advocate for voters that aims to reduce the level of deception and confusion in U.S. politics." (Why not try something easier first, like say peace in the Middle East?)

Here's the essence of a chain e-mail that FactCheck.org decided to fact check: Is Snopes.com run by a "very Democratic" duo who long hid their true identities, rarely do any real research, and blatantly fabricated a tale about a State Farm Insurance agent just because he publicly opposed the election of President Obama?

No, no, no and no were the conclusions. Employing that age-old reporter's trick of contacting the primary source — in this case, State Farm — FactCheck.org was able to confirm that, yes, the insurance giant had asked the agent to stop using its brand name as his political soapbox. The group could find no evidence of political contributions or activism on the part of the Mikkelsons — he's a former Republican turned independent; she's a Canadian who cannot vote.

From FactCheck.org: "We checked online to see if (David Mikkelson) had given money to any federal candidates, and nothing turned up. Mikkelson even faxed us a copy of his voter registration form. He asked us not to post an image of it, but we can confirm that it shows he declined to state a party affiliation when he registered last year, and also that when he registered in 2000 he did so as a Republican.

"Do the Snopes.com articles reveal a political bias? We reviewed a sampling of their political offerings, including some on rumors about George W. Bush, Sarah Palin and Barack Obama, and we found them to be utterly poker-faced. David does say that the site receives more complaints that it is too liberal than that it is too conservative. Nevertheless, he says, 'We apply the same debunking standards to both sides.'"

Of course, the reason Snopes.com is more often accused of bias by conservatives than by liberals is that facts have a notoriously liberal bias.

The FactCheck fact checkers found plenty of evidence that the Mikkelsons are serious if not obsessive researchers, not exactly a revelation to fans of the site, such as yours truly. As for hiding their identities, the first of countless press mentions of Snopes dates back to a 1995 article in the *Los Angeles Times* that named David Mikkelson.

Bottom line: You can go on trusting Snopes.com as much as you'd trust any other source of information on the Internet (and, no, that's not meant to be back-handed).

Incidentally, the Mikkelsons make no claim to infallibility and insist that their highest objective is to help convince people to think critically about what they hear and read … and to do their own fact checking.

Because you never know when Oprah might really give away a million dollars.

Comments and scurrilous rumors should be sent to buzz@nww.com.

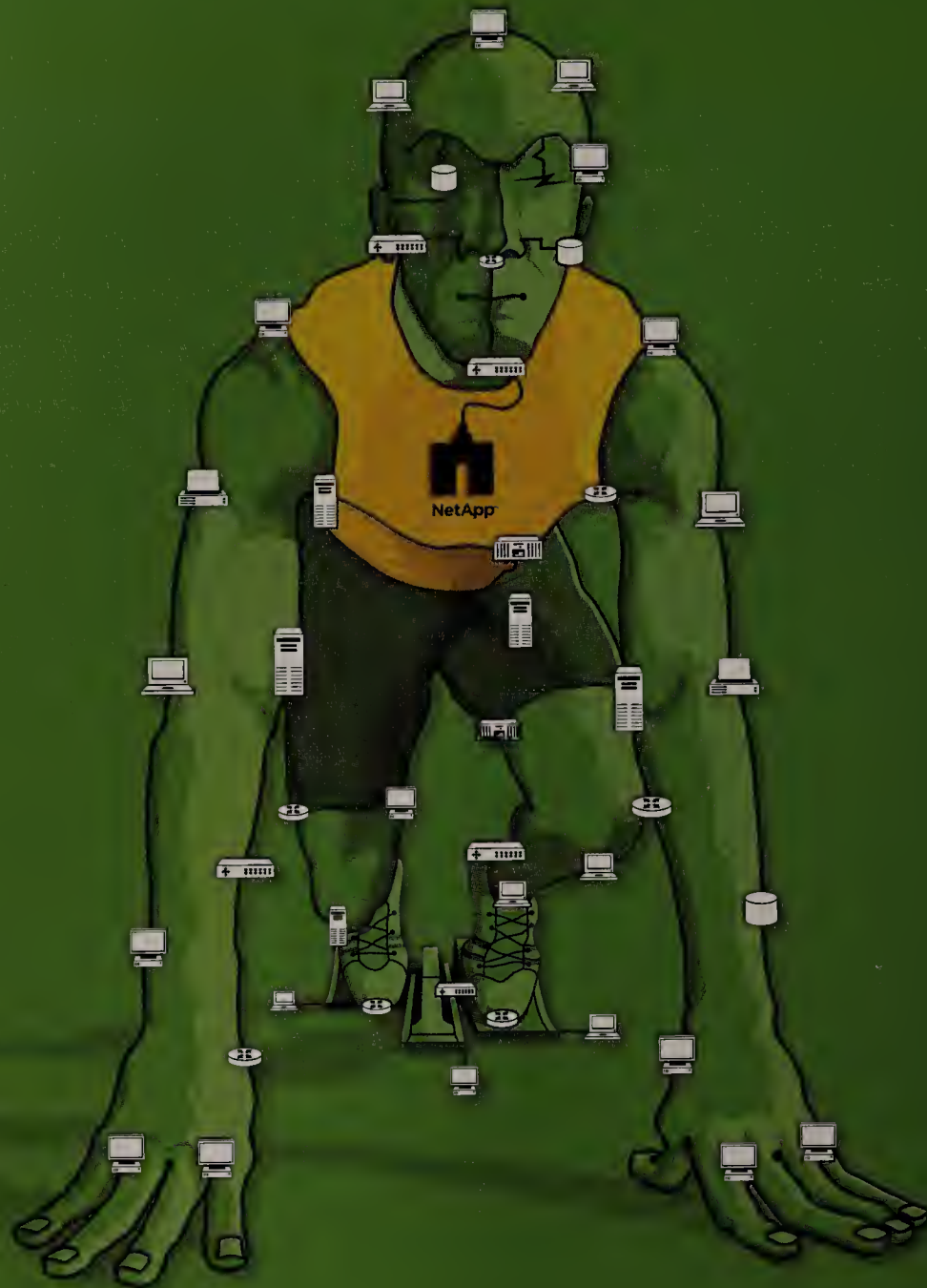# LEANER.
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